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BROAD ASPECTS OF DEVELOPMENTAL DISABILITIES

835 A BRAMOWICZ, HELEN D.; & RICHARDSON, STEPHEN A. Epidemiology of severe mental retardation in children: community studies. American Journal of Mental Deficiency, 80(1):18-39 1975.

Twenty-seven epidemiological studies of SMR (including 19 considered to have reliable data) showed a marked consistency in the prevalence of SMR (defined as intelligence quotient of less than 50) in older children. A prevalence rate of about 4 per 1000 was reported, in spite of differences in time, type of community studied and methodology. A somewhat higher rate was found in males, but variations were not associated with social class. Significant associated handicaps were found in about one-half of the SMR children. Although the causes of most cases of SMR are not known, Down's syndrome was present in one-sixth to one-third of the cases of SMR; other genetic and metabolic disorders accounted for a small percentage of cases. A long-term epidemiological study might elucidate other etiological factors and clarify the role of certain perinatal complications (especially those associated with low birth weight). (41 refs.)

Rose F. Kennedy Center Albert Einstein College of Medicine 1410 Pelham Parkway South Bronx, New York 10461

836 The Developmentally Disabled Offender in the Illinois Criminal Justice System.
Chicago, Illinois: Correctional Services for the Developmentally Disabled, Inc., 1975. 214 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$11.37, plus postage. Order No. ED119407.

In order to elucidate the special needs and problems of developmentally disabled prisoners in the Illinois criminal justice system, 5 studies collected questionnaire and interview data from law officers, judicial and corrections personnel, 50 developmentally disabled offenders, and community agencies which serve epileptic, cerebral palsied, and MR individuals. Data analyses indicated that law officers in Illinois are not adequately trained to detect developmental disability in suspects, that the judicial system supports the concept and the practice of referring disabled offenders to community agencies as an alternative to incarceration, and that there is a tendency among community agencies to provide less expensive services, such as referral and recreation, to developmentally disabled offenders rather than more costly training or special living arrangements. Better training for law enforcement and corrections personnel in identifying and treating disabled offenders and efforts to standardize the definition of MR within the judicial system are recommended.

837 Congressional Research Service. Key facts on the handicapped. (HD 7575 A, 7516 ED). Klebe, Edward R. Washington, D.C.: Library of Congress, 1975. 35 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MR \$0.83; HC \$2.06, plus postage. Order No. ED119454.

Overall statistics on the U.S. handicapped population from 1970 to 1975 are provided, including details on the blind, deaf and hard of hearing, MR and mentally ill. Statistics are also given concerning the Federal-State vocational rehabilitation program, such as numbers and percent served, overall and by state. Statistics are compiled for the whole country and by state, by

age, by degree of handicap, and by percent served. The percentage of handicapped youth receiving special educational services is also tabulated. Visual, hearing, speech, and health impairments, MR, emotional disturbance, and learning disability are defined.

838 BROWNING, PHILIP L. Several issues in mental retardation: a needed perspective? Working paper No. 81. Eugene, Oregon: Oregon University Rehabilitation Research and Training Center in Mental Retardation, 1975. 14 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED109836.

Deinstitutionalization and normalization practices may potentially damage MR persons. The public's lack of awareness of the problems of deinstitutionalization and misplaced emphasis on the part of professionals are responsible for difficulties caused by the movement to get the MR out of institutions and back into society. Professionals seem more concerned with researching the public attitude than with improving the training of the MR. We must examine the impact of normalization and deinstitutionalization policies on the feelings and behavior of the MR.

839 SEN, ARUN K. Mental retardation in India: a short description. *Mental Retardation*, 13(4):11-13, 1975.

It has been estimated that 4 percent or 22 million of the Indian population are MR. Although facilities for the MR and voluntary organizations promoting their interest have expanded in the last decade, there has been no national commitment to research, provision and coordination of services, and/or training personnel. Elementary education is being offered to an increasingly large group of MR children, but services and facilities for adult MRs are sparse. Until recently, much of the research on MRs performed by Indians has been done abroad. The applicability of these studies to MRs in India is limited by linguistic problems and cultural differences. Comprehensive legislation must be passed to promote the interests of MRs, to stimulate preventive efforts, and to ensure MRs their basic rights. (8 refs.)

840 CLEMENTS, JAMES D.; & WARREN, SUE ANN. Preface to a preface. Ad astra per aspera. Mental Retardation, 13(3):2-3, 1975. (Editorial)

Comments on the 1973 revision of the American Association on Mental Deficiency's manual on terminology and classification were considered in remedying some of the manual's deficiencies. The 1975 revision of the manual will clarify issues and efforts related to: 1) concepts such as standard deviations and the relationship of "measurement errors" to classification; 2) precise definition of the developmental period; 3) relationships between diagnosis and availability of services, with emphasis on the importance of establishing diagnosis independently of decisions concerning services; and 4) the implications and consequences of diagnosis and/or classification when used inappropriately. Clarification of these issues is important because of the influence of diagnosis and classification systems on legislation, legal decisions, and service delivery regulations.

POLLOWAY, EDWARD A.; & PAYNE, JAMES S. Comparison of the AAMD Heber and Grossman manuals on terminology and classification in mental retardation. *Mental Retardation*, 13(3):12-14, 1975.

The 1973 (Grossman) and 1961 (Heber) editions of the American Association on Mental Deficiency's Manual on Terminology and Classification are compared. Changes in definition, behavioral classification, and medical classification have been prompted by changing opinions and medical advances relating to MR. The Grossman manual reflects: 1) a trend towards conservatism and caution in labeling as exhibited in changes in definition and behavioral classifications; and 2) alterations in the medical classification system resulting from recent scientific studies. The deletion of any classificatory mention of cultural-familial MR is the most potentially controversial change in the 1973 Manual. (15 refs.)

Department of Education University of Virginia Charlottesville, Virginia 842 CASE, JAN; & CLELAND, CHARLES C. Eminence and mental retardation as determined by Cattell's space method. Mental Retardation, 13(3):20-21, 1975.

A review of general texts or reference works in MR published between 1908 and 1974 indicated that 23 books contained specific references to individual MRs. Analysis of total lines devoted to each MR indicated that Victor, the "Wild Boy of Aveyron" (Itard), was the most famous. Other eminent MRs included J. H. Pullen, the "genius" of Earlswood Asylum; Gottfield Mind, "The Cat's Raphael"; and "Blind Tom." However, Victor is the only MR about whom a movie has been produced. (31 refs.)

Department of Special Education University of Texas Austin, Texas

843 BROWNING, PHILIP L. Public awareness? Mental Retardation, 13(3):44-45, 1975.

The recent effort to increase public awareness and tolerance of MR via popular media may not be beneficial. The term MR often triggers off a private and heavily distorted image of what MR is which may serve to reinforce erroneous stereotypes. Moreover, increasing public tolerance is of questionable value in a society where individuals labled as MR seek to conceal the label. An effective way of dealing with public intolerance may entail providing MRs with more training experiences which prepare them for public attitudes and help them cope with intolerance.

Rehabilitation Research and Training Center in Mental Retardation University of Oregon Eugene, Oregon

844 SWARTZ, JON D.; & CLELAND, CHARLES C. A note on nomenclature.

Mental Retardation, 13(3):45, 1975.

Recent studies are cited which confuse SMR and PMR categories of mental deficiency and use the 2 categories interchangeably. The PMR are appreciably more deficient than the SMR. A group of experienced attendants and professionals indicated unanimously that it is improbable that PMRs could apologize by word or gesture for misbehaving, as reported by Azrin and Armstrong

(1973). To avoid further magnification of conceptual confusion in the literature, the PMR classification used by review editors and investigators should conform to the definition given in the American Association on Mental Deficiency's *Manual* as revised in 1973. (6 refs.)

Department of Psychology University of Texas of the Permian Basin Odessa, Texas

845 Comprehensive Needs Study of Individuals with the Most Severe Handicaps. Executive Summary. Washington, D.C.: Urban Institute, 1975. 43 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED117931.

In a comprehensive needs study of individuals with severe handicaps, data file analysis, client surveys, a review of the literature, and constituency impact assessments were methods used to gather information. Findings included: the total U.S. population with severe handicaps is 10,067,000; age plays a crucial role in the impact of a disabling condition; minimal efforts have been made by local governments to eliminate barriers in public housing and facilities; transportation needs were second only to vocational placement in perceived need; low employment rates are related to such factors as capital disincentives and employer discrimination; and development of a weighted case closure system, reduction of caseload size, and intensive training programs facilitate serving the severely handicapped. Consumer-run self-help organizations and a special revenue sharing plan are suggested as needs program options and key policy interpretations and the implications for such services as transportation, employment, health coverage, income maintenance, and consumer involvement are analyzed.

846 MUNAN, L.; KELLY, ANTHEA; & COTE, R. Do the right children have necropsies? Analysis of selected determinants. *Archives of Disease in Childhood*, 50(8):620-625, 1975.

Of 371 infant and child deaths in Sherbrooke, Quebec, over a 2-year period, necropsy was conducted on 52 percent. Frequency of postmortem examination varied with diagnostic categories. Other factors which influenced the performance of necropsies included age at death, with frequency decreasing with age; investigation conducted before death, with necropsy less frequent when the clinical picture was ill-defined; and place of death, with necropsy less frequent when death occurred outside the hospital. It would be desirable to conduct fewer necropsies when cause of death is already known, and more when the clinical picture is not clear. (15 refs.)

Department of Epidemiology Faculty of Medicine University of Sherbrooke Sherbrooke, Quebec Canada JiH 5N4

847 Health, Education, and Welfare Department. The problem of mental retardation. Washington, D.C., 1975. 21 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119418.

In an introductory booklet on MR, information is provided on definitions, incidence, and etiology. Tests used to diagnose MR and developmental characteristics of individuals with varying degrees of MR are described. Habilitation services, including community programs, special education, and residential care and preventive measures are also discussed.

848 RADTKE, FREDERICK ALBERT. What, then, is mercy? A descriptive study of the attitudes of Western society toward mentally retarded people with philosophical, psychological and theological implications. Dissertation Abstracts International, 36(6):3568A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-26,305.

A descriptive review of western society's relationship with the MR sector of its population has substantiated an ongoing sense of ambiguity and continued rejection. A humanitarian interest in MRs developed as a product of the eighteenth century European Enlightenment. Education became viewed as a means to improve mankind, and theorists concluded that the education process

would constitute the means whereby MRs would attain normality. The impact of this movement received a significant impetus in the United States during the nineteenth century. However, towards the end of the century and continuing into the mid-twentieth century, society was encouraged to condone isolation, segregation, and sterilization of MRs. The period following World War II saw a general awakening to the needs of MRs, but society's basic attitude remained one of rejection. Society's attitudes of hostility towards MRs have been created by various considerations in addition to psychological factors.

St. Louis University St. Louis, Missouri

849 DUTTON, GORDON. Mental Handicap. London, England: Butterworths, 1975, 176 p. £6.

Mental handicap is treated from the scientific standpoint with particular reference to causation and remedial therapy in 8 chapters of a monograph from the Postgraduate Psychiatry Series. Chapter 1 includes a brief historical introduction and considers the definition of mental handicap, normal development, intelligence, the distribution of IQs, incidence and prevalence of mental handicap, and the inheritance of intelligence. Chapter 2 covers the etiology of mental handicap under "nonpathological" and "pathological" headings. Chapters 3 and 4, on preconceptual causes of mental handicap, describe, respectively, chromosomal anomalies (including indications for chromosome studies) and dominant, recessive, and sex-linked disorders associated with mental handicap. A brief note on genetic counseling is also included. Chapter 5 outlines prenatal causes of mental handicap associated with malformations, and chapter 6 deals with natal and postnatal causes, including birth injury, malnutrition, infection, heavy-metal poisoning, and brain damage. Chapters 7 and 8 discuss the needs of the mentally handicapped (physical, psychological, and emotional) and residential services provided for them and present a section on the treatment of patients with violent or antisocial behavior. Plates indicating some of the typical conditions are provided in addition to tables and summaries.

South Ockendon Hospitals London, England 850 JONSEN, A. R.; PHIBBS, R. H.; TOOLEY, W. H.; & GARLAND, M. J. Critical issues in newborn intensive care: a conference report and policy proposal. *Pediatrics*, 55(6):765-768, 1975.

A small, multidisciplinary conference held on May 19, 1974, in Sonoma Valley, California, to consider the ethical problems raised by neonatal intensive care reviewed illustrative cases, produced papers on the major considerations affecting clinical-ethical questions, raised 4 questions which focused on the clinical situation, and yielded a moral policy stating areas of responsibility and ethical guidelines for decisions about care of newborn infants. Specific problems considered were associated with decisions on whether or not to resuscitate, to withdraw life support, and to intervene directly to kill a dying infant, Background material was organized around the themes of development of neonatal intensive care, legal and policy perspectives, early indicators of development, family concerns, and economic issues. The posed questions addressed the issues of initial intervention, withdrawal of life support already begun, active lethal intervention, and allocation of the limited resources of a neonatal intensive care unit. The ethical propositions identified 4 moral fields-value, responsibility, duty, and interest-which must be considered in decisions about sustaining neonatal life. Procedural recommendations suggested certain institutional and social arrangements which would facilitate deliberation and action on the basis of the ethical propositions. (23 refs.)

Health Policy Program, University of California at San Francisco 1326 Third Avenue San Francisco, California 94143

851 Task Force on Pediatric Research, Informed Consent and Medical Ethics. AAP code of ethics for the use of fetuses and fetal material for research. *Pediatrics*, 56(2):304-305, 1975.

Research on the fetus and newborn is of great importance in contributing to the health and welfare of the entire population. Such research should continue subject to adequate and clearly defined safeguards. The American Academy of Pediatrics (AAP) recognizes that some areas of research are not of direct benefit to a particular

fetus, although its health and welfare are not jeopardized. In such cases, the express consent of the parent should be obtained. Research involving the fetus in utero or pregnant women may be undertaken within precisely delineated areas to benefit the fetus, to respond to the health needs of the mother, or to evaluate methods of offsetting the effects of genetic abnormality or congenital injury. The AAP code of ethics is based upon carefully worded definitions of "viability of the fetus" and "abortus." (4 refs.)

852 LEWONTIN, R. G. Genetic aspects of intelligence. Annual Review of Genetics, 9:387-405, 1975.

The problems of estimating the heritable components of variation for any human metrical character, especially breaking the correlation between genetic and environmental similarity, are great and have not been understood by most human behavioral geneticists. Adoption studies that are reasonably large and scrupulous in the randomization of individuals over the range of environments obtainable in the population at large are necessary. The failure to adhere to clean experimental design renders all work uninterpretable, since approximate designs do not give approximate results. What is true for estimating heritability within populations is doubly true for making statements about genetic differences between race and socioeconomic classes; no conceivable design can randomize black and white children over family environments. From either a scientific or a social standpoint, the problem of assaying the genetic components of IQ test differences seems trivial and hardly worth the immense effort that would have to be expended to carry out decent studies. (53 refs.)

Museum of Comparative Zoology Harvard University Cambridge, Massachusetts 02138

853 PENROSE, L. S. A Clinical and Genetic Study of 1,280 Cases of Mental Defect (The "Colchester Survey"). London, England: Institute for Research into Mental and Multiple Handicap, 1975. 159 pp. £2.20. Paperback.

A facsimile reproduction of the original Medical Research Council Report of 1938 on the classic Colchester Survey of mental deficiency is pre-

854 BROAD ASPECTS OF DEVELOPMENTAL DISABILITIES

sented. The Survey contains extensive family studies and investigations of particular pathological conditions with respect to type of inheritance (dominant or recessive). Approximately half of the report consists of an Appendix which gives certain data on each patient individually and includes the mental grade of parents and of each sib and the abnormalities found in the family.

854 BLACK, LAWRENCE. A bibliography of bibliographies on mental retardation, 1963-June 1975. Albany, New York: New York Dept. of Mental Hygiene, 1975. 25 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED116432.

A bibliography of over 100 bibliographies (published in 1963-1975) is intended for social workers, teachers, and other professionals working in the MR field. The categories reviewed include: traumatic MR, teratology, syndromes, psychology, psychology of learning, psychological treatment, pathology, nutrition, neurology, mental testing, intoxication in childhood, care of the MR, biochemistry, and general references. All entries are arranged alphabetically by author or contributing organization. Approximately 300 or more citations are listed for each bibliography, and information such as author, title, number of pages, source, publisher, publication date, number of citations, and a brief description are provided. The ERIC (Education Resources Information Center) accession number is also included when applicable.

MEDICAL ASPECTS - Diagnosis (General)

855 LOSCHEN, E. L. Failures in diagnosis and treatment in mental reatardation. *Mental Retardation*, 13(3):29-31, 1975.

Diagnostic errors and/or inadequacies in planning intervention approaches are 2 reasons why MRs may not respond to treatment programs. Diagnostic pitfalls include overlooking subtle physical disabilities and inadequate assessment of the client's emotional attributes and problems. Once diagnosis has been skillfully made, treatment may fail if it is inappropriate for the diagnosis, inappropriate for the program, or inappropriately refers the patient to other programs. A comprehensive treatment plan should take physical, emotional, family, and social factors into consideration, as well as the degree of MR experienced by the client. A rational approach to diagnosis and planning includes concern with placement in an optimum program but is flexible enough to allow institution of the best possible program when the optimum is not available. (2 refs.)

Department of Psychiatry Southern Illinois University School of Medicine Springfield, Illinois 62708

856 Child Find: Proceedings from a Conference. Lexington, Kentucky: Coordinating Office for Regional Resource Centers. National Association of State Directors of Special Education, 1975. 78 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$4.67, plus postage. Order No. ED117910.

Seven papers delivered at the March 1975 National Child Find conference sponsored by the Coordinating Office for Regional Resource Centers and the National Association of State Directors of Special Education are presented. Identification, diagnostic, and evaluation programs for handicapped children are described for each of the 7 states: New Jersey, Project Child: A Special Education Early Childhood Identification Project;

North Carolina, Count the Children; Maryland, Early Identification Sub-System of the Maryland Special Services Information System; Idaho, Idaho Child Find; Pennsylvania, COMPILE: Commonwealth Plan for Identification, Location and Evaluation of Mentally Retarded Children; Colorado, Early and Periodic Screening, Diagnosis and Treatment Program; and California, Whittier Area Comprehensive Plan for Special Education. A matrix of 26 child find systems with an accompanying address list of contact persons for each system is also provided.

National Association of State Directors of Special Education 1201 16th Street, N.W. Washington, D.C. 20036

857 BRETT, E. M.; & LAKE, B. D. Reassessment of rectal approach to neuropathology in childhood. Review of 307 biopsies over 11 years. Archives of Disease in Childhood, 50(10):753-762, 1975.

The present status of rectal biopsy as a diagnostic test for neurological disease was reviewed in a series of 307 biopsies, including 93 newly reported cases. Although the need for biopsy has diminished with the improvement in other methods (particularly enzyme assay), rectal biopsy is necessary in the various forms of Batten's disease and in the neurovisceral storage disease with supranuclear ophthalmoplegia (Neville, 1973). Its use is unjustified in certain other diseases, such as metachromatic leukodystrophy, either because the result would be negative or because other less traumatic, reliable means of diagnosis are available. Rectal biopsy is justified on rare occasions to exclude Batten's disease in a healthy sib of a known case with this disorder or to detect the disease before clinical symptoms appear. Without a full thickness biopsy and a full range of staining methods, the investigation will not give reliable diagnostic information and may result in false negative results. (27 refs.)

Hospital for Sick Children Great Ormond Street London, WC1N 3JH, England 858 DAVIES, D. P.; ANSARI, B. M.; & COOKE, T.J.H. Anterior fontanelle size in the neonate. Archives of Disease in Childhood, 50(1):81-83, 1975.

A simple clinical method of measuring the size of the anterior fontanelle in the newborn infant in terms of area is described, and data are compared for anterior fontanelle size in 3 groups of newborn infants: preterm, small-for-dates, and term infants. The measurement method, which identifies the 4 apices of the anterior fontanelle and takes markings with a felt pen on the skin which are transferred onto white paper, is based on the assumption that the anterior fontanelle has the shape of a quadrilateral. Values obtained for infants suggest an enlargement of the fontanelle with gestational age. Infants who are small for date have significantly larger anterior fontanelles than either premature or term infants. Knowledge of normal variations in anterior fontanelle size may provide a baseline which will be useful in early diagnosis of congenital hypothyroidism or other disorders of skeletal development. (6 refs.)

Department of Child Health Welsh National School of Medicine Health Park, Cardiff CF4 4XW, Wales

859 FRIAS, JAIME L. Prenatal diagnosis of genetic abnormalities. Clinical Obstetrics and Gynecology, 18(4):221-236, 1975.

In the area of prenatal detection of fetal abnormalities, transabdominal amniocentesis is currently the most widely used technique. In addition, sonography and radiography have been used for prenatal detection of fetal genetic disease, whereas techniques for direct visualization of the fetus using fiberoptic endoscopes are still in experimental phases of development. Maternal studies have also been attempted for prenatal detection of fetal abnormalities. Despite the accumulation of a large body of data since the introduction of these techniques, many questions remain unresolved. Several situations emphasize the uncertainties in the correlation between laboratory abnormalities and fetal genetic disease. Although prenatal diagnosis has great potential value for the high-risk couple who might not have attempted a pregnancy without the availability of intrauterine diagnosis, it should not be regarded primarily as a method for preventing genetic disease. In fact, since amniocentesis is generally employed only in high-risk pregnancies, this technique and selective abortion can have only limited impact in the reduction of genetic disease in the population at large. Moral and religious convictions as well limit the application of prenatal diagnostic procedures at the individual level. (70 refs.)

Department of Pediatrics University of Florida College of Medicine Gainesville, Florida

860 RIVINUS, T. M.; JAMISON, D. L.; & GRAHAM, P. J. Childhood organic neurological disease presenting as psychiatric disorder. Archives of Disease in Childhood, 50(2):115-119, 1975.

Twelve children previously diagnosed as suffering from a psychiatric disorder were admitted to a neurological ward over a 12-month period and were diagnosed as cases of neurological disease. Among the diseases represented were astrocytoma of spinal cord, diffuse cortical sclerosis with Addison's disease, congenital syphilis, subacute sclerosing panencephalitis, and metachromatic leukodystrophy. The age range of the children at the time of presenting symptoms was between 4 years 5 months and 10 years. The behavioral symptoms which led to a psychiatric diagnosis were deteriorating school performance in 6 children, disturbances of posture in 5, and difficulty in seeing the blackboard at school for the remaining child. In many of the children, these symptoms were overshadowed at the time of initial presentation by more common psychiatric symptoms, such as aggressive behavior, temper tantrums, and anxiety symptoms. Reconsideration of the psychiatric diagnosis followed the onset of epileptic seizures in 3 children, increased loss of power in the limbs and loss of visual function in 4, or parental pressure for a further opinion, diagnostic doubts in the psychiatric team, or requests for re-evaluation by other physicians. The age range of the children at the time of final neurological diagnosis was between 6 years 5 months and 14 years 10 months. Thus, a diagnostic delay of between 2 and 71 months occurred. (6 refs.)

Children's Hospital Medical Center 300 Longwood Avenue Boston, Massachusetts 861 WALD, NICHOLAS; BARKER, SHEILA; PETO, RICHARD; BROCK, D.H.J.; & BONNAR, J. Maternal serum α-fetoprotein levels in multiple pregnancy. British Medical Journal, 1(5959):651-652, 1975.

Ten twin pregnancies and one triplet pregnancy were each matched with 2 control singleton pregnancies for age of mother, parity, and time of gestation at which a serum sample was obtained (within 17 days), and sera were assayed for alpha-fetoprotein (AFP) using a double-antibody radioimmunoassay. Each sample was assayed 3 times. In each multiple pregnancy the maternal serum AFP levels were higher than in either of the 2 corresponding control pregnancies. In the twin pregnancies the geometric mean level was 2.1 times that in singleton pregnancies. In the triplet pregnancy the level was 4.7 times higher than in the corresponding controls. To avoid an unnecessary amniocentesis for the diagnosis of anencephalus or spina bifida in patients with raised serum AFP levels, an ultrasonic examination should first be performed to exclude multiple pregnancy and identify anencephalus. (8 refs.)

D.H.S.S. Cancer Epidemiology and Clinical Trials Units Department of the Regius Professor of Medicine Radcliffe Infirmary Oxford OX2 6HE, England

862 Non-invasive investigations of the brain. British Medical Journal, 2(5966):295-296, 1975. (Editorial)

The electromagnetic interference (EMI) brain scan, a computerized transverse axial scan of the brain, is the most valuable and entirely safe method of noninvasive intracranial investigation. Invasive techniques are complex and potentially hazardous, and the skull radiograph, EEG, angiography, and studies of cerebral blood flow or regional cerebral function do not have all of the advantages of EMI scans. Although the original expenditure for the EMI scanner is high, its cost-effectiveness is becoming apparent. The technique is truly noninvasive, and the x-ray dose is too low to be considered dangerous. For diagnostic purposes normal structures may be demonstrated and intracranial space-occupying lesions shown. The EMI is, unfortunately, still used on only a limited basis in Britain. (13 refs.)

863 SELLER, M. J.; & *ADINOLFI, M. Levels of albumin, α-fetoprotein, and IgG in human fetal cerebrospinal fluid. Archives of Disease in Childhood, 50(6):484-485, 1975.

Levels of alpha-fetoprotein (AFP), albumin, and immunoglobulin G (IgG) were estimated in the cerebrospinal fluid (CSF) of 6 fetuses (16½ to 25½ weeks of gestation) in studies relevant to the detection of neural-tube defects and to the permeability of the blood-brain barrier. All of these components were present in significant amounts, but the level of AFP decreased, albumin increased, and IgG remained roughly constant during the 9-week period. The permeability of the blood-brain barrier does not seem to be fully developed during fetal life. AFP may pass from the CSF into the amniotic cavity when the neural tissue is exposed. (8 refs.)

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864 NORGAARD-PEDERSEN, B.; LIND-STEN, J.; & PHILIP, J. Alpha fetoprotein levels in maternal serum and in amniotic fluid from early normal pregnancies. Clinical Genetics, 7(2):170-175, 1975.

An attempt was made to determine 90 percent reference curves for alpha-fetoprotein (AFP) levels in amniotic fluid and maternal serum with simple AFP quantitation methods suitable for large-scale quantitation. A total of 103 amniotic fluid samples was analyzed, 95 of them obtained by amniocentesis and 8 by aspiration of intact sacs at hysterotomy. A total of 241 serum samples was examined from normal pregnant women at different gestational weeks. Only amniotic fluid and serum samples from women whose infants were normal at birth were included. AFP was determined in amniotic fluid and serum respectively, by rocket immunoelectrophoresis and radioimmunoelectrophoresis, principally identical methods. The computed nonparametric curve showed a marked, nearly linear fall in amniotic fluid AFP concentration from the twelfth to the twentysecond week of gestation. There was a steady increase in AFP concentration up to about 500 μg/l at the thirty-fourth week of gestation. After that time, a small decline was observed. Up to the twentieth week of gestation, the normal maternal serum AFP concentration was below 200 μ g/l. (19 refs.)

Department of Clinical Chemistry A Rigshospitalet Belgdamsvej 9 2100 Kobenhavn 0, Denmark

865 BROCK, D.J.H.; SCRIMGEOUR, J. B.; & NELSON, M. M. Amniotic fluid alphafeto-protein measurements in the early prenatal diagnosis of central nervous system disorders. Clinical Genetics, 7(2):163-169, 1975.

Amniotic fluid alpha-fetoprotein (AFP) concentrations were measured in 520 pregnancies between 8 and 24 weeks' gestation with both normal and abnormal outcome. The normal range of values was defined by 220 samples where the fetus was examined and found to be grossly normal; this gestational profile showed a peak of activity at 13 weeks and, thereafter, a steady fall to 20 weeks and a slower decline to 24 weeks. Five out of 8 abnormal values were encountered in fluids aspirated from the intact sacs of spontaneous abortions. With the exception of 2 fluids where there was severe Rh-isoimmunization, only in pregnancies leading to spina bifida and anencephaly were abnormally high values found. Among 13 such cases examined before 24 weeks' gestation, AFP concentrations ranged from a low of 3 times the upper limit of normal to a high of 20 times the upper limit of normal; the 2 Rh-affected fluids had AFP values only slightly above the upper limit of the normal range. Normal AFP values were observed in 36 amniotic fluids from pregnancies where the outcome was rhesus isoimmunization, an inborn error of metabolism, a cytogenetic disorder, or a birth defect unrelated to the central nervous system. (18 refs.)

University Department of Human Genetics Western General Hospital Edinburgh EH4 2HU, Scotland

866 LAXOVA, RENATA; LEWIS, B. VICTOR; & SUDDABY, MARY. A clinical service for prenatal diagnosis. Lancet, 2(7942):964-966, 1975.

Close collaboration between geneticist and obstetrician allowed organization of a centralized prenatal diagnostic service involving transabdominal amniocentesis in 174 pregnant women and cytogenetic study. Fifty-four mothers aged 40 years and older underwent amniocentesis because of maternal age; 16 mothers aged 37-39 years requested the procedure. Nine women over age 40 refused amniocentesis, and 1 of them gave birth to an infant with Down's syndrome. Of the total group of women over age 40 (63), 3 had a fetus with a chromosomal abnormality due to nondisjunction (47,XX 21+, 47,XXY, and 47,XXX), and 1 had an anencephalic fetus. Amniocentesis was followed by fetal death and abortion in 3 patients, all of whom had repeat amniocentesis. Measurement of the fetal biparietal diameter by ultrasound proved previously calculated dates wrong and enabled the correct timing of amniocentesis in at least 4 patients. (12 refs.)

Waisman Center on MR and Human Development University of Wisconsin Madison, Wisconsin

*HASS, GERALD; SCOVELL, MELVIN E.; **FOLTZ, ANNE-MARIE; & SILVER, GEORGE A. EPSDT and poor people's medicine. *Pediatrics*, 56(1):148-149, 1975. (Letters)

Drs. Hass and Scovell fear that Early and Periodic Screening, Diagnosis and Treatment (EPSDT) may result in a reaffirmation of poor people's medicine nationwide, as a consequence of a significant lack of manpower and possible fragmentation of health care for poor children. Advocacy of EPSDT as a program separate from comprehensive care and separate from Medicaid has confused both government and the medical profession. The revision of the EPSDT mandate to include a "moving toward comprehensive care" provision should be supported. Drs. Foltz and Silver point out that while a minimum program such as EPSDT must not be allowed to become the national standard for health care to poor children, it must be utilized until a more effective program is enacted. Professionals and parents should pressure federal and state Medicaid agencies to carry out the 1968 EPSDT law, and pediatricians must also participate in public programs. (2 refs.)

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868 MORROW, GRANT, III. latrogenesis imperfecta-a new pediatric problem. *Pediatrics*, 55(4):453-455, 1975.

In this medical age of electronic and technologic advances, including prospective screening programs and prenatal diagnostic techniques, the physician is often willing to place unwarranted confidence in laboratory data regarding his patients. latrogenesis imperfecta describes the situation in which no signs and symptoms are present but in which an "abnormal" laboratory test catalyzes the physician to perform a diagnostic or therapeutic act. Unfortunately, the procedure can have a deleterious effect on the patient and/or his family. Mass prospective screening programs create optimal opportunities for a physician to commit iatrogenesis imperfecta. Since newborns with phenylketonuria (PKU), for example, do not have characteristic signs or symptoms of the disease, diagnosis and treatment have to be carried out solely on the basis of laboratory tests. However, patients with hyperphenylalaninemia variants have been discovered who do not have PKU and who do not require dietary restrictions. In prospective biochemical evaluations, the physician who assumes that an "abnormal" test requires action without carefully analyzing the result may be in error. When dealing with prenatal diagnosis, the physician cannot arrive at conclusions based upon study of noncultured amniotic cells for enzymatic activity. (5 refs.)

University of Arizona Arizona Medical Center Tucson, Arizona 85724

869 LOESCH, DANUTA. Topological formulation of finger-tip patterns: comparison of complete and incomplete 21 trisomics with normal subjects. *Journal of Mental Defici*ency Research, 19, Part 2:121-137, 1975.

The extension of the topological formulation to include the dermatoglyphic patterns on fingers enables dermatoglyphic descriptions to be uniform for palms, soles, and fingers, so that populations may be compared for total pattern types. The present method of finger pattern formulation arranges finger patterns in the form of dictionaries of total finger pattern types. The traditional "whorls" or "double loops" are treated as 2 loops in opposition, so that the ulnar and radial sides of the finger tip provide separate characters. In a sample application of the method to 302 normal individuals, 225 complete 21-trisomics, and 173 incomplete 21-trisomics, the frequencies of the most common total finger pattern types were compared using dictionaries listing all individual descriptions of total finger pattern types. Statistical problems with this method arise in connection with ulnar and radial component mean value counts and the distribution of individual values. (14 refs.)

Department of Genetics Psychoneurological Institute Warsaw, Poland

MEDICAL ASPECTS — Prevention and Etiology (General)

870 STERNLICHT, MANNY; STAABY, JUDY; & SULLIVAN, INA. Birth order, maternal age, and mental retardation. Mental Retardation, 13(6):3-6, 1975.

Relationships between birth order of a MR child, the mother's age at the child's birth and the etiology of MR were studied in 309 institutionalized MRs and 69 MRs from a community

facility. Statistical analysis indicated that the MR was most frequently the first born child in a family in both groups. Nonsignificant differences between the 2 groups were observed in the second and third birth order positions, with more MRs in the institution sample born in these positions. Age of mother at the birth of the MR differed significantly between the groups, with a mean CA of the mother at 27.66 for the institutionalized sample and 32.92 for the community sample. Mean CAs of mothers of Down's Syndrome children from both groups was 34.03. Sixteen percent of the institutionalized sample was found with Down's syndrome, while an incidence of 42 percent was seen in the community group. Age of the mother is probably not as important in the decision to institutionalize a child as other factors such as etiology of the MR or subtle racial-cultural influences. (8 refs.)

Willowbrook Developmental Center Staten Island, New York

871 PHILIPPE, J. V. Influence of ionizing radiation on fetoplacental growth in mice. American Journal of Obstetrics and Gynecology, 123(6):640-645, 1975.

Single doses of 60 Co whole-body irradiation were given to about 600 inbred primiparous mice on gestational days 9, 10, 11, or 12 to determine how the placenta reacts to irradiation in particular, and design a reference model showing the spectrum of responses related to exposure to varying doses of radiation at consecutive gestational stages. Findings indicated a definite decrease in the fetal weight following irradiation. Observed reductions in fetal weight were: day 9, 150-175 rem (r.); day 10, 125-150 r.; day 11, 75-175 r.; day 12, 125-450 r. A high mortality rate was detected beyond the upper limit doses: 64.5 percent on day 10 at 175 r. and 63 percent on day 11 at 200 r. The placenta grew rapidly from day 13 to 15, almost reaching its maximum development. A progressive decrease in the placental index was seen from day 13 to 18, but the index was higher than the control on day 12 in treated animals, while lower on day 9, 10, or 11. (20 refs.)

P.O. Box 1471 Station "A" Montreal, Quebec, H3C 2Z9 Canada 872 COHEN, WAYNE R.; SCHIFRIN, BARRY S.; & DOCTOR, GEETI. Elevation of the fetal presenting part: a method of intrauterine resuscitation. American Journal of Obstetrics and Gynecology, 123(6):646-649, 1975.

Elevation of the fetal presenting part is a new method of treating fetal distress in utero which has evolved from an understanding of fetal heart rate patterns. Recurrent late or severe variable decelerations may be indicative of impaired fetal oxygenation. Several cases in which elevation of the fetal presenting part was employed to improve severe variable decelerations suggest that this may be a successful procedure for correcting fetal heart rate patterns. This technique may relieve or improve fetal hypoxia resulting from an occult cord prolapse or other causes of severe variable decelerations. (9 refs.)

Department of Obstetrics and Gynecology Beth Israel Hospital 330 Brookline Avenue Boston, Massachusetts 02215

873 ARIAS, FERNANDO. Expansion of intravascular volume and fetal outcome in patients with chronic hypertension and pregnancy. American Journal of Obstetrics and Gynecology, 123(6):610-616, 1975.

A study of 20 multiparous patients with chronic hypertension and pregnancy suggested that measurement of blood volume and endogenous creatinine clearance in hypertensive patients is a useful parameter for predicting poor fetal outcome. Classification of the severity of hypertension during pregnancy was of no value in identifying mothers at risk of delivering infants with retarded intrauterine growth. However, pregnancies leading to growth retardation and fetal death were characterized by failure to achieve a blood volume expansion of at least 60cc per kilogram. The decrease or absence of intravascular volume expansion was reflected in the presence of creatinine clearance values at nonpregnant levels in mothers who were delivered of infants who were small for gestational age. Creatinine levels were significantly below nonpregnant levels in women who were delivered of stillborn infants. (24 refs.)

Department of Obstetrics and Gynecology 4911 Barnes Hospital Plaza St. Louis, Missouri 63110 874 Ohio. Mental Health and Mental Retardation Department. Primary Prevention: a Selected, Annotated Bibliography. (Education and Training Office, Prevention and Education Section.) Columbus, Ohio, 1976, 52 pp.

One hundred and fifty-six annotated resources in the areas of mental disorders, MR, and drug abuse are presented. A chronological listing and chart of definitions of primary prevention is also included. An index arranged by topic area provides easy reference to all items.

Ohio Department of Mental Health and MR Prevention and Education Section Office of Education and Training 2929 Kenny Road Columbus, Ohio 43221

875 EMERY, A. E. H. Genetic counseling. British Medical Journal, 3(5977):219-223, 1975.

Genetic disease is defined in terms of unifactorial. chromosomal, and multifactorial disorders as an introduction to a discussion of problems of genetic counseling. Unifactorial disorders are due to a single Mendelian gene, which may be dominant, recessive, or X-linked; they are rare but carry a high risk to relatives. Chromosome disorders are associated with mongolism (Down's syndrome), male infertility (Klinefelter's syndrome), or primary amenorrhea (Turner's syndrome). Multifactorial disorders include many congenital malformations, hypertension and other diseases of modern society, and psychiatric disorders. At present roughly 1 in 20 children admitted to hospital have a unifactorial or chromosomal disorder, accounting for about 1 in 10 of childhood deaths. A serious complication in genetic counseling is genetic heterogeneity, involving disorders which are clinically similar but are inherited in different ways. In such cases a specialist genetic counselor is needed. Parents should never be told what to do, but should be provided with all the information necessary to help them to arrive at an informed decision themselves. The role of the family doctor in managing a family with a genetic disorder is described. (7 refs.)

876 Perinatal research. British Medical Journal, 2(5965):236-237, 1975. (Editorial)

The last 15 years have seen a surge of activity among obstetricians and pediatricians, leading to the creation of perinatal medicine as a subject spanning fetal and early neonatal life. The condition of the baby, rather than his mere survival, is becoming the standard of clinical success. While physiologists have established an important role for themselves in perinatal research, questions in need of urgent answers, such as growth retardation in the latter weeks of pregnancy, are arising in modern obstetric and pediatric clinical practice. These questions must be answered by basic scientists working in collaboration with clinicians. The clinical researcher is at a disadvantage in studying the processes of pregnancy and the neonatal period experimentally, because there are ethical objections to research that is not of obvious immediate benefit to the patient. In this situation it seems likely that physiologists will resort increasingly to animal models that mimic conditions affecting the fetus and newborn infant, (5 refs.)

877 HOEHN, HOLGER; BRYANT, EILEEN M; KARP, LAWRENCE E.; & MARTIN, GEORGE M. Cultivated cells from diagnostic amniocentesis in second trimester pregnancies. II. Cytogenetic parameters as functions of clonal type and preparative technique. Clinical Genetics, 7(1):29-36, 1975.

Individual primary amniotic fluid cell colonies in cultures initiated from a series of samples obtained by transabdominal amniocentesis between 15 and 19 weeks of amenorrhea in cases of advanced maternal age were analyzed using an in situ preparative technique. Of a total of 418 primary amniotic fluid colonies, 5.5 percent were fibroblast-like (F), 33.7 percent were epithelioid (E), and 60.8 percent had characteristics of what has previously been shown to be the principal class of clonable amniotic fluid cells (AF). Polyploidy occurred in all 3 categories, although both pure tetraploidy and mixoploidy were more frequent in E colonies. The incidence of nonconstitutional chromosomal changes was identical in AF and E type colonies if primary spreads were analyzed in situ without prior trypsinization. Aneuploidy was twice as high in pooled cell suspensions, and the overall incidence of metaphases with structura'

alterations (excluding achromatic lesions and single chromatid breaks) was 3 to 4 times greater in suspension spreads than in in situ preparations of either AF or E clones. In situ preparation of primary clones is clearly preferable to other modes of metaphase preparation because it allows readily analyzable multiple individual primary clones and earlier cytogenetic diagnosis. (20 refs.)

Department of Pathology SM-30 University of Washington Seattle, Washington 98195

878 HON, EDWARD H.; & PETRIE, ROY H. Clinical value of fetal heart rate monitoring. Clinical Obstetrics and Gynecology, 18(4):1-23, 1975.

Although there are no truly controlled studies to date that demonstrate clearly the clinical value of continuous fetal heart rate (FHR) monitoring, the available research and clinical data indicate its usefulness. Where electronic monitoring has been used in clinical obstetrics, a decrease has been noted in intrapartum fetal mortality, fetal and neonatal acidosis, and, possibly, respiratory distress syndrome. The high-risk fetus may be in jeopardy from chronic uteroplacental insufficiency as the result of a medical complication of pregnancy, acute uteroplacental insufficiency as the result of excessive uterine activity and/or maternal hypertension, and umbilical cord compression. Since these cannot be detected with auscultation of the fetal heart beat, electronic techniques for the surveillance of all patients during labor seem justified. An objective measurement of uterine activity can be obtained by continuously recording intrauterine pressure. Interpretation of FHR and uterine contraction records is directly dependent upon appropriate instrumentation and understanding of FHR patterns. Infection and trauma associated with internal fetal monitoring techniques appear to be minimal. (26 refs.)

Los Angeles County-University of Southern California Medical Center Women's Hospital Los Angeles, California

879 GOODNER, DAVID M. Teratology for the obstetrician. Clinical Obstetrics and Gynecology, 18(4):245-263, 1975.

At present, the arsenal of adverse effects of the environment on the fetus consists of drugs, radiation, infections, chemicals and pollutants, and employment risks. Teratologic catastrophes such as the thalidomide tragedy are certainly possible today. In fact, absolute protection against teratologic risks is probably unattainable. To lessen the possibility of adverse environmental effects on fetal development, early detection of detrimental effects in humans should be combined with reliable preclinical testing in animals. As a result of the expansion and increased usage of drugs, food additives, pesticides, and other environmental chemicals, mutation-induced susceptibility to disease is now conserved and even propagated. Chromosomal studies and evaluation of mutagenic potential should be integral aspects of the safety appraisal of all newly established agents, and all individuals at risk should be screened. Such individuals could be offered routine chromosomal monitoring, and the occurrence of adverse effects and abnormalities could be noted and correlated. (54 refs.)

Department of Obstetrics and Gynecology Temple University Health Sciences Center Philadelphia, Pennsylvania

880 EDINGTON, P. T.; SIBANDA, J.; & BEARD, R. W. Influence on clinical practice of routine intra-partum fetal monitoring. British Medical Journal, 3(5979):341-343, 1975.

Eighty-five percent of the 1,070 patients delivered at a London hospital during 1973 and 92 percent of those delivered in 1974 were monitored by continuous fetal heart rate recording. Monitoring is credited with the virtual elimination of intrapartum stillbirths and a significant reduction in neonatal mortality. Overall perinatal mortality fell significantly from levels in preceding years to 15.8 per 1,000 births in 1973 and 11.7 per 1,000 births the next year. Three monitors served 1,000 patients. Although changes in clinical policies and in the composition of the obstetric population may influence perinatal mortality independently, monitoring of all patients is recommended owing to the difficulty of reliably predicting intrapartum fetal distress. (19 refs.)

Department of Obstetrics and Gynaecology St. Mary's Hospital London W2 1 PG, England 881 MALAN, A. F.; & HIGGS, S. C. Gestational age assessment in infants of very low birthweight. Archives of Disease in Childhood, 50(4):322-324, 1975.

Eighty-six apparently healthy infants weighing 1500g or less were tested for accuracy of gestation age between 24 and 48 hours after birth using the Dubowitz scoring system (1970). A satisfactory correlation was found between scored and calculated ages. The system is applicable to and accurate for very premature infants and is a better guide to morbidity and mortality than birthweight. (7 refs.)

Department of Pediatrics and Child Health University of Cape Town Observatory, South Africa 7900

882 HOLLOWAY, SUSAN M.; & SMITH, CHARLES. Effects of various medical and social practices on the frequency of genetic disorders. American Journal of Human Genetics, 27(5):614-627, 1975.

New medical practices for the prevention of genetic disease are considered, including those whose short-term effects are largely dysgenic and those with principally eugenic effects. Practices with dysgenic effects comprise improved treatment of affected individuals, selection of mates, and selective abortion with full reproductive compensation. Factors with eugenic effects are family limitation by all carriers, family limitation by detected carriers at risk, artificial insemination in matings at risk, and selective abortion without reproductive compensation. The deleterious effects of some of these practices may be avoided by genetic counseling or offset by other preventive practices. In recessive disorders, a small reduction in the average fitness of carriers detected by population screening would outweigh the deleterious effects of other practices. There seems to be little cause for alarm about the deleterious effects of the new medical and social practices being adopted. (11 refs.)

Department of Human Genetics University of Edinburgh Western General Hospital Edinburgh EH4 2HU, Scotland 883 REILLY, PHILIP. Current state-supported neonatal screening programs. American Journal of Human Genetics, 27(5):691-693, 1975. (Letter)

A national survey to determine state programs in genetic screening for disorders other than phenyl-ketonuria indicated that galactosemia, homocystinuria, adenosine deaminase deficiency, maple syrup urine disease, tyrosinemia and histidinemia, and sickle cell anemia are among the disorders for which infants are being screened. New York has a program to screen infants for 6 of these disorders. In Tennessee and Nebraska, programs are being sponsored to reduce the incidence of Down's syndrome by amniocentesis of pregnant women over the age of 35. (5 refs.)

Graduate School of Biomedical Sciences University of Texas Houston, Texas 77025

884 CRAWFORD, J. W. Computer monitoring of fetal heart rate and uterine pressure. American Journal of Obstetrics and Gynecology, 121(3):342-350, 1975.

In a preliminary study of the use of computers in monitoring and assessing uterine pressure and fetal heart rate during labor, an Elliot 903 computer was employed initially to collect data and later to give comment and advice as the data was collected, and the larger Elliot 4130 computer was used for in-depth analysis of the previously collected data. Another wire connection between the computer and the labor room carried the computer output to a teletype situated in the labor room that allowed the clinician direct access to the 903 computer to start and stop data collection and, once information was being collected, to interrogate the computer with certain well-defined questions. The computer also gave spontaneous information. If the system fails in some way, a spontaneous warning printout is obtained. No deductions are possible yet on the basis of the more than 100 labors thus far assembled on magnetic tape, but the feasibility of the project has been established. (14 refs.)

Department of Obstetrics and Gynecology University of Dundee Dundee, Scotland 885 SYBULSKI, S.; & MAUGHAN, G. B. A rapid method for the measurement of estradiol and hydrocortisone levels in maternal and fetal blood and amniotic fluid. American Journal of Obstetrics and Gynecology. 121(1):32-36. 1975.

A method employing Sephadex LH-20 chromatography and a competitive protein-binding assay that uses human late pregnancy plasma as the source of the binding proteins sex hormone-binding globulin (testosterone-binding globulin) and transcortin (corticosterone-binding globulin) for estradiol and hydrocortisone assay, respectively, permits simultaneous measurement of estradiol and hydrocortisone levels in maternal and fetal (umbilical cord) blood in human pregnancy. The technique, which permits completion of assay of estradiol levels in maternal plasma on the same day blood is withdrawn, makes daily monitoring of a high-risk pregnancy for plasma estradiol levels possible. The method is especially useful in investigations of the possible link between estradiol and hydrocortisone in the development of the neonatal respiratory distress syndrome. (7 refs.)

Department of Obstetrics and Gynaecology Royal Victoria Hospital 687 Pine Avenue West Montreal, Quebec, Canada H3A 1A1

886 BURNETT, LONNIE S.; KING, THEO-DORE M.; ATIENZA, MILAGROS F.; & BELL, WILLIAM R. Intra-amniotic urea as a midtrimester abortifacient: clinical results and serum and urinary changes. American Journal of Obstetrics and Gynecology, 121(1):7-16, 1975.

Seventy-four patients with gestations of 16 to 20 weeks received intra-amniotic urea (80g) and intravenous oxytocin for the purpose of inducing abortion. Seventy-one of 74 patients were aborted successfully by intra-amniotic urea with a mean injection-abortion interval of 18.33 hours. The mean serum urea nitrogen following urea injection rose to 33 mg percent at 4 hours. Maximum changes in serum electrolytes occurred 8 to 12 hours after injection and included a decrease in mean sodium, chloride, and carbon dioxide concentrations and an increase in serum potassium. The mean decrease in body weight was 5.6lbs. The leukocyte concentration increased, but the

hematocrit showed no significant change throughout 24 hours of observation. An increase in urinary excretion of urea began within 4 hours, but there was no significant diuresis in the presence of intravenous oxytocin administration. Beginning approximately 8 hours after urea injection, there was a drop of about 15 percent in mean plasma fibrinogen concentration and a drop of about 18 percent in mean platelet count. Fibrinogen-fibrin degradation products were increased significantly in 36 percent of the patients studied. (43 refs.) (Author abstract modified)

Department of Obstetrics and Gynecology Johns Hopkins University 601 N. Broadway Woman's Clinic 126 Baltimore, Maryland 21205

887 LAUERSEN, NIELS H.; & BIRNBAUM, STANLEY J. Water intoxication associated with oxytocin administration during saline-induced abortion. American Journal of Obstetrics and Gynecology, 121(1):2-6, 1975

Four cases of water intoxication, one of them resulting in severe grand mal seizures and brain damage, occurred in connection with oxytocin administration during saline abortion. Serum sodium levels were decreased in all cases. Oxytocin was administered intravenously to all patients in electrolyte-free solutions. Water intoxication developed in patient 3 despite administration of oxytocin in Ringer's lactate solution, but she was not given an intra-amniotic instillation of hypertonic saline. In patients 1, 2, and 3, the hypoxic state was apparently so short that they could be discharged without cerebral damage. In case 4, however, the seizure lasted several minutes, and diffuse cerebral damage resulted. At the time of discharge, 6 weeks after the incident, the patient remained unable to speak, read, or write. These cases illustrate the danger of prolonged use of large amounts of oxytocin in nonelectrolyte solutions and indicate the need for careful monitoring of urinary output and of such early signs of the syndrome as asthenia, muscular irritability, or headache. (29 refs.)

Department of Obstetrics and Gynecology New York Hospital-Cornell University Medical College 1300 York Avenue New York, New York 10021 888 FUJIKURA, TOSHIO; & KLIONSKY, BERNARD. The significance of meconium staining. American Journal of Obstetrics and Gynecology, 121(1):45-50, 1975.

The comparative pathologic findings in autopsies of 788 neonates born with (143) or without (645) meconium staining were studied to determine the possible link between this condition and various other disorders. Ss included in the study all were live births. Although 10.3 percent of all live-born infants had meconium staining, the condition was present disproportionately in 18.1 percent of 788 neonatal deaths. The mortality rate was 3.3 percent in the stained group but only 1.7 percent in the nonstained group. Both the frequency distribution and the incidence of meconium staining increased significantly in babies with birth weights over 3,501gm; the incidence was also slightly elevated in babies under 2.000gm. The stained group had a significantly higher incidence of cardiovascular malformations (13.9 percent vs. 6.5 percent), erythroblastosis fetalis (22.4 percent vs. 5.2 percent), chorioamnionitis (37.7 percent vs. 23.7 percent), and pre-eclampsia (11.1 percent vs. 5.8 percent). Conversely, hyaline membranes (13.9) percent) and atelectasis (37.7 percent) were lower in the stained than in the nonstained group, where the rates were 29.7 percent and 53.6 percent, respectively. Hypothetically, the increased number of deaths in stained neonates may be related to the stresses of cumulative or chronic hypoxia which may occur after the initial passage of meconium if delivery is prolonged. (17 refs.)

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889 Radiation and the genetic load. *Lancet*, 2(7939):803-804, 1975. (Editorial)

It is estimated that the genetically significant dose (GSD) of radiation delivered to the gonads during the reproductive years from the naturally occurring background radiation of cosmic rays and radioactive elements in the earth's crust averages 100mrad per person annually. By 1980, the GSD from x-ray examinations may, in some industrialized countries, amount to a further 100 mrad. If it was assumed that the spontaneous-mutation rate was due to background radiation alone, doubling the GSD would increase substantially the frequen-

cy of disorders due to mutant genes. Studies have shown that the GSD could be reduced to one-third without reducing the frequency of x-ray examination if standardized techniques aimed at minimizing gonad doses were employed. To allow gonadal radiation to increase indiscriminately, without thought for the effects on future generations, would be highly irresponsible, in view of the fact that gonadal exposure can be avoided by simple protective measures and careful techniques. (2 refs.)

890 WEISS, D. B.; ABOULAFIA, Y.; & DOLLBERG, M. Needle puncture of fetus during amniocentesis. Lancet, 2(7940):867, 1975. (Letter)

With the use of a simple technique, fetal trauma has been prevented in the course of amniographies done in pregnancies complicated by oligohydramnion. In these pregnancies, the needle can be inserted easily into fetal parts, and the contrast medium injected into the fetal organs. To avoid complications, a polyethylene catheter can be inserted through the spinal needle immediately after it has entered the amniotic cavity, with 2ml of contrast medium injected if the catheter is inserted without any resistance. After an x-ray is taken to ensure placement of the catheter in the amniotic cavity, the whole amount of contrast medium needed can be injected safely. (2 refs.)

Upton Hospital Slough, Berkshire SL1 1BJ England

891 MARCUSE, EDGAR K. Immunization: an embarrassing failure. *Pediatrics*, 56(4):493-494, 1975.

Immunization practices for infants have been dangerously ineffective, and an urgent need exists for public immunization programs aimed at schoolchildren. To achieve optimal immunization levels, all barriers to immunization must be removed. Immunizing materials purchased with public funds for use in health department clinics must also be made available to financially needy patients of practicing physicians, and physicians should be reimbursed for reasonable costs of administering vaccines to these patients. Medical records should be set up to encourage routine checking of the immunization status of each child.

Ultimate responsibility for immunizing an infant rests with the parents. Unfortunately, the motivation that parents need to bring their children for preventive care is often lacking. It is the obligation of the medical profession to educate the public. (2 refs.)

Odessa Brown Children's Clinic 2017 East Spruce Street Seattle, Washington 98112

892 KEITH, LOUIS. Abdominal hysterectomy for surgical sterilization in the mentally retarded. American Journal of Obstetrics and Gynecology, 123(8):921, 1975. (Letter)

In response to a previous article on surgical sterilization of MRs, clinical experience is cited which suggests that abdominal hysterectomy is a reasonable means of fertility control for this group. In addition to protecting MRs and their families from the hardships of unwanted pregnancies, hysterectomy can eliminate problems associated with personal hygiene relating to the monthly period as well as cyclical emotional problems and seizure activity. Physicians and third parties who fund patient care should initiate careful discussions about Federal guidelines which prohibit the use of Federal funds for sterilization of MRs. (1 ref.)

University of Health Sciences The Chicago Medical School 2020 W. Ogden Avenue Chicago, Illinois 60612

893 BERGER, GARY S.; EDELMAN, DAVID A.; & KERENYI, THOMAS D. Oxytocin administration, instillation-to-abortion time, and morbidity associated with saline instillation. American Journal of Obstetrics and Gynecology, 121(7):941-946, 1975.

The relationship between oxytocin supplementation, instillation-to-abortion time, and morbidity following intra-amniotic instillation of hypertonic saline was examined in 4,069 healthy gravidas. Patients administered intravenous oxytocin had a significantly shorter instillation-to-abortion time (median, 25.5 hours) than patients who were not administered the agent (median, 33.3 hours).

Expulsion time was independent of the rate of oxytocin administration but was associated with the time at which oxytocin infusion was begun. Less time from instillation to abortion was observed when oxytocin infusion was started within 8 hours after instillation. Potential advantages of oxytocin augmentation (in terms of a lower proportion of patients being exposed to potential infections) seem to be counterbalanced by an increased incidence of clinical consumptive coagulopathy in cases where instillation-to-abortion intervals are less than 24 hours. (12 refs.)

International Fertility Research Program University of North Carolina at Chapel Hill Chapel Hill, North Carolina 27514

894 YEH, MING-NENG; MORISHIMA, HISAYO O.; NIEMANN, WENDELL H.; & JAMES, L. STANLEY. Myocardial conduction defects in association with compression of the umbilical cord: experimental observations on fetal baboons. American Journal of Obstetrics and Gynecology, 121(7):951-957, 1975.

Sixteen pregnant baboons at a mean gestational age of 152 days (term 185 days) were studied to determine the mechanism underlying myocardial conduction defects associated with umbilical cord occlusion. Thirty-two observations were made on fetal hemodynamics, heart rate, and acid based changes; 11 observations were made afer the fetus was administered atropine (1.81 to 0.02 mg) intravenously. Before atropine, various degrees of conduction defects occurred in 17 of 21 observations. Complete atrioventricular block with extra systoles was seen 6 times. A rapid recovery of myocardial conduction followed release of cord occlusion. Atropine prevented myocardial conduction defects, bradycardia was less, and the onset was delayed. Conduction defects associated with cord occlusion may be due to parasympathetic stimulation, or to an increased sensitivity of the fetal myocardium to acetylcholine under hypoxic conditions. No recommendations can be made regarding the administration of atropine to the fetus when cord compression is suspected. (20 refs.)

Department of Obstetrics and Gynecology College of Physicians and Surgeons of Columbia University 630 West 168th Street New York, New York 10032 895 MYERS, JERRY L.; HARRELL, MARY JANE P.; & HILL, FREDDIE L. Fetal maturity: biochemical analyses of amniotic fluid. American Journal of Obstetrics and Gynecology, 121(7):961-967, 1975.

Both bilirubin concentration and lecithin-sphingomyelin ratio (L/S) showed good correlation with gestational age when 4 methods of evaluating fetal maturity were compared in 103 samples of amniotic fluid from 21 normal and 64 medically complicated pregnancies. A test for the percentage of fat cells gave too many false negative results, and a creatinine concentration test did not correlate well with gestational age. The rapid foam test for surfactant was evaluated in 20 of the samples and was not reliable in predicting the risk of respiratory distress syndrome. Since the respiratory distress syndrome is the major cause of death in premature infants, the maturity of the fetal lung should be the prime concern, and the L/S ratio is the best test. Other procedures provide useful supplementary information about fetal maturity, but they should be used in conjunction with L/S ratio. (12 refs.)

Department of Pediatrics University of Texas Medical Branch Galveston, Texas 77550

896 CHILDS, BARTON. Prospects for genetic screening. *Journal of Pediatrics*, 87(6, part 2):1125-1132, 1975.

Changing patterns of disease incidence and mortality suggest the value of the preventive approach to health problems. A program of environmental control aimed at disease reduction is probably not possible, but genetic screening might be a practical approach. The probable success of genetic screening efforts is suggested by continuing research describing new human hereditary characteristics; early signs of a successful biochemical and mendelian genetic attack on common chronic diseases thought to be multifactorial in origin; and studies revealing the extent of human genetic variability. Aims of genetic screening are to discover persons with early or incipient disease amenable to treatment; to discover persons to whom reproductive information would be useful; and to carry out epidemiological and other research studies. An effort is needed to accommodate genetic screening under the same direction and at the same site as primary medical care, but programs should be considered experimental, and data on impact and effectiveness should be collected. (27 refs.)

Johns Hopkins University School of Medicine Department of Pediatrics Baltimore, Maryland

897 CHILDS, BARTON. Genetic screening. Annual Review of Genetics, 9:67-89, 1975.

Developments in genetic screening, defined as the search in a population, generally for medical reasons, for individuals possessing particular genotypes, are reviewed. Attempts are being made to come to grips with one of the least understood and most important problems in medical genetics: the nature of the genes associated with common, multifactorial diseases. Aims of genetic screening are discussed in terms of screening for disease, for reproductive information, and for epidemiological studies. The discussion of screening for disease encompasses phenylketonuria, other metabolic errors, hyperlipidemia, alpha 1-antitrypsin deficiency, cystic fibrosis, adenosine deaminase deficiency, and Duchenne muscular dystrophy. Screening for reproductive information includes hemoglobinopathies, Tay-Sachs disease, Down's syndrome, and neural tube defects; hazards of amniocentesis and antenatal diagnosis of sex are also discussed. Screening for epidemiological studies is discussed in terms of chromosome abnormalities, organization of screening, and social impact. (107 refs.)

Department of Pediatrics Johns Hopkins University School of Medicine Baltimore, Maryland 21205

898 MCKUSICK, VICTOR A. The growth and development of human genetics as a clinical discipline. American Journal of Human Genetics, 27(3):261-273, 1975.

The history of clinical genetics is traced from its origin in 1959, when a confluence occurred between cytogenetics, biochemical genetics and the formal genetics that existed before 1900. The swelling of the biochemical stream of the 1950s was caused by the development of chromatog-

raphy, a therapy for phenylketonuria, Pauling's concept of molecular disease, paper electrophoresis of variant hemoglobins, an intense interest in hemoglobinopathies and other hereditary anemias, and Smithies' starch gel electrophoresis method. In early 1959 the chromosomal bases of 3 congenital abnormalities-the syndromes of Down, Klinefelter, and Turner-were discovered. Phytohemagglutinin stimulation of lymphocytes made study of chromosomes in a sample of peripheral blood a simple procedure for patient and doctor. State institutions for the MR became intellectually exciting places to work. The development of population and mathematical genetics and immunogenetics followed. Clinical genetics is now involved in all parts of clinical practice: diagnosis, prognosis, and treatment; to these it adds prevention. The cardinal principles of clinical genetics-genetic heterogeneity, pleiotropism, and variability-are discussed, as well as genetic counseling and family followup and organization of clinical genetic services. (43 refs.)

Department of Medicine Johns Hopkins University School of Medicine Baltimore, Maryland 21205 899 DUC, GABRIEL; BUCHER, HANS U.; & MICHELI, JEAN L. Is transcutaneous PO₂ reliable for arterial oxygen monitoring in newborn infants? Pediatrics, 55(4):556-567, 1975. (Letter)

The oxygen monitor 5300 Roche and the oxygen electrode of Huch et al., electrodes allowing transcutaneous PO2 (tc PO2) measurements, were compared. Fifty-one simultaneous measurements of PO2 and to PO2 were performed with the Roche electrode in 14 spontaneously breathing infants (CA 29 to 40 gestational weeks, birthweight 1,320 to 3,280gm). In 5 artificially ventilated infants (CA 27 to 35 weeks, birthweight 1,400 to 2,490gm), 38 PO₂ measurements were compared with tc PO2 simultaneously recorded on the 2 electrodes. The electrode of Roche was shown to be unreliable for PO2 monitoring in newborns. The measurements carried out with the Huch electrode justify further study to delineate the limitations of the method. (2 refs.)

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MEDICAL ASPECTS — Etiologic Groupings Infections and intoxications

900 MARKAND, OMKAR N.; & PANSZI, JOSE G. The electroencephalogram in subacute sclerosing panencephalitis. Archives of Neurology, 32(11):719-726, 1975.

The EEGs of 31 patients with confirmed cases of subacute sclerosing panencephalitis (SSPE) were reviewed to determine the diagnostic importance of the EEG. Periodic high amplitude delta complexes were observed in all but one case, consisting of 2-4 high amplitude delta waves, usually bisynchronous and symmetrical, which repeated once in 5-7 secs. A 1-to-1 relationship existed between the clinical myoclonic jerks and the periodic EEG complexes. Other atypical EEG

findings included frontal rhythmic delta activity in intervals between periodic complexes, paroxysms of bisynchronous spike activity, focal abnormalities, such as spike and slow wave foci, electrodecremental periods following EEG complexes, and random spikes over frontal regions. Despite the variability of EEG findings, there is usually no difficulty in diagnosing SSPE if both the EEG and clinical findings are considered. (30 refs.)

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Department of Neurology Indiana University School of Medicine Indianapolis, Indiana 46202 901 SHUMAN, ROBERT M.; LEECH, RI-CHARD W.; & *ALVORD, ELLSWORTH C., JR. Neurotoxicity of hexachlorophene in humans: II. A clinicopathological study of 46 premature infants. Archives of Neurology, 32(5):320-325, 1975.

Evidence indicates that hexachlorophene should not be used at all with the small premature infant and should be used selectively and carefully in older infants and children. All premature infants under 1,400gms birthweight who survived at least 4 days and were later examined by autopsy were subjected to a blind clinicopathological analysis over a 7.5 year period in 2 Seattle, Washington, hospitals. There was a significant statistical association of vacuolar encephalopathy of the brain stem reticular formation with premature newborn infants who had been subjected to repeated whole-body bathing in 3 percent hexachlorophene-bearing soap (undiluted pHisoHex). It appears that the prevalence of vacuolar encephalopathy in premature infants on whom there is adequate brain stem histological information is correlated with the number of exposures of hexachlorophene, the concentration of hexachlorophene, the thoroughness of rinsing, and other factors, including exposure to ultraviolet light. (34 refs.)

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902 SHUMAN, ROBERT M.; LEECH, RICH-ARD W.; & *ALVORD, ELLSWORTH C., JR. Neurotoxicity of topically applied hexachlorophene in the young rat. Archives of Neurology, 32(5):315-319, 1975.

The vacuolar encephalopathy observed in small premature human infants exposed to hexachlorophene (HCP) was reproduced in young rats, to compare resulting data with human manifestations previously observed. Young rats 6-22 days of age were extremely susceptible to the neurotoxic effects of HCP given as a daily bath of undiluted antiseptic detergent containing 3 percent HCP (pHisoHex). Most rats were clinically and histologically damaged by as few as 2 daily baths at this age. Because they have less myelin to be affected, younger rats were relatively resistant. The more mature livers of older rats excrete the drug more

effectively, presumably protecting older rats from being poisoned by this route. Rats exhibited age-dose-response curves similar to those observed in humans, indicating that the animal model may be useful in examining other factors in the neurotoxicity of HCP, including frequency of bathing, concentration of HCP, degree of rinsing, possible reversibility of the lesion, and effects of ultraviolet radiation. (25 refs.)

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903 BALOH, ROBERT; STURM, RANDALL; GREEN, BONNIE; & GLESER, GOLDINE. Neuropsychological effects of chronic asymptomatic increased lead absorption: a controlled study. Archives of Neurology, 32(5):326-330, 1975.

A controlled study was made of the neuropsychological effects of chronic asymptomatic increased lead absorption, by mean of a comparison of 27 asymptomatic children with confirmed chronic increased lead absorption with 27 matched control children. Children were examined for evidence of neuropsychological impairment, based on results of a complete history, physical examination, quantitative neurological tests, and comprehensive psychological tests. In the subjects with increased lead levels, a significantly increased incidence of hyperactive behavior was observed. However, no significant difference in any of the quantitative test results was found. Uncertainty remains about the neuropsychological effects of asymptomatic increased lead absorption, possibly due to lack of confirmation of lead absorption in elevated lead and control groups in infancy, difficulty in isolating the effect of increased lead absorption from other adverse environmental factors, and variable length and route of exposure. (27 refs.)

Department of Neurology Reed Neurological Research Center Center for the Health Sciences UCLA School of Medicine Los Angeles, California 90024 904 TOWNSEND, JEANNETTE J.; WOLINS-KY, JERRY S.; BARINGER, J. RI-CHARD; & JOHNSON, PETER C. Acquired toxoplasmosis: a neglected cause of treatable nervous system disease. *Archives* of *Neurology*, 32(5):325-343, 1975.

The clinical features of 6 patients with acquired toxoplasmosis were analyzed, together with those of 39 cases from the literature, in order to define the neurological manifestations of this infection. There were 18 malignant neoplasms, 2 renal transplants, and 3 collagen vascular diseases, all of which were treated with intensive immunosuppressive therapy. The others had primary toxoplasmosis. Diffuse encephalopathy with or without seizures, meningoencephalitis, and singular or multiple progressive mass lesions were the 3 major neurological patterns observed. Although no significant results were obtained from routine neurological diagnostic studies, either or both the Sabin-Feldman dye test and the IgM indirect fluorescent antibody test effectively confirmed the diagnosis. Of 14 patients who were treated with sulfadiazine or pyrimethamine or both, 13 responded positively. In the immunosuppressed patient who appears with neurological involvement, a diagnosis of toxoplasmosis should be considered. (41 refs.)

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905 FRIEDMAN, HARVEY M.; GILDEN, DONALD H.; LIEF, FLORENCE S.; RORKE, LUCY B.; SANTOLI, DANIELA; & KOPROWSKI, HILARY. Hydrocephalus produced by the 6/94 virus: a parainfluenza type 1 isolate from multiple sclerosis brain tissue. Archives of Neurology, 32(6):408-413, 1975.

The effect of intracerebral (IC) inoculation of 6/94 virus (a parainfluenza type 1 isolate from multiple sclerosis brain tissue) into newborn Syrian hamsters was compared with that produced by IC inoculation of 3 other parainfluenza type 1 viruses: HA2, a temperature sensitive mutant of HA2, and Sendai virus. The 6/94 virus produced obstructive hydrocephalus, resulting from necrosis and fusion of ependymal cells lining the aqueduct of Sylvius; all animals subsequently developed

clinical disease and died within a week. The 6/94 virus antigen was observed in ependyma and meninges, while paramyxovirus nucleocapsids were observed within cytoplasm of ependymal cells. No hydrocephalus was produced by intraperitoneal or subcutaneous injection of 6/94 virus or by HA2 virus or its temperature sensitive mutant. The Sendai virus, however, did cause lesions similar to those seen after 6/94 virus. 6/94 virus was recovered from brains only for 2 days, but infectious virus was recovered from in vitro brain explants for 21 days. Up to 1 month after infection, no evidence of rising hemagglutination-inhibiting antibody was observed. (19 refs.)

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906 ANDERSON, J. M.; KILSHAW, B. H.; HARKNESS, R. A.; & KELLY, R. W. Spongioform myelinopathy in premature infants. *British Medical Journal*, 2(5964):175-176, 1975.

Considerable quantities of hexachlorophene (HCP) were isolated from formalin-stored brain tissue from 1 of 2 premature infants with spongioform myelinopathy following normal clinical use of a 3 percent solution of HCP. A trace level was found in the second infant. Myelinopathy was probably attributable to HCP in the first infant, despite the absence of clinical signs of toxicity. The trace level in the second case suggested that myelinopathy was unrelated to HCP, although this infant may have lived long enough (24 days) for HCP to have been cleared from the brain. (5 refs.)

Royal Hospital for Sick Children Edinburgh, EH9 1LF, Scotland

907 GREENBERG, GILLIAN; INMAN, W.H.W.; WEATHERALL, JOSEPHINE A.
 C.; & ADELSTEIN, A. M. Hormonal pregnancy tests and congenital malformations. British Medical Journal, 2(5964):191-192, 1975. (Letter)

The evidence from a study of 149 abnormal babies (70 with malformations of the central nervous system, 9 with reduction deformities of the limbs,

13 with congenital disease, 11 with Down's syndrome, and 46 with other malformations) together with 149 practice-matched controls supports the notion that the continued use of withdrawal-type pregnancy tests has little justification when alternative methods are available. A total of 23 mothers of abnormal babies had been exposed during the first trimester of pregnancy to drugs containing hormones, as compared with only 8 of the control mothers. One of the 23 had also taken an oral contraceptive and norethisterone tablets. The use of iron and folic acid and other drugs in this period was approximately the same in the case and control groups.

Committee on Safety of Medicines London E.C.2, England

908 GILDEN, DONALD H.; RORKE, LUCY BALIAN; & TANAKA, RYUICHI. Acute SSPE. Archives of Neurology, 32(9):644-646, 1975.

Two patients were encountered who developed an acute encephalitis that left them comatose within 9 and 13 days, until their deaths 1 month and 2 weeks later, respectively. The diagnosis of subacute sclerosing panencephalitis (SSPE) was confirmed pathologically. Paramyxovirus nucleocapsids were seen by electron microscopy, and measles virus antigen was demonstrated in the brain of patient 2, using indirect immunofluorescence. A review of pathologically verified cases of SSPE uncovered only 1 patient in whom acute encephalopathy evolved in less than 2 weeks. The possible relationship between retinal involvement and the more acute forms of SSPE raises the question of whether the causative agent of SSPE may acquire virulent neurotropism in the retina before invading the central nervous system. SSPE should be considered in the differential diagnosis of acute viral encephalitis. (14 refs.)

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909 TUREL, ANTHONY P., JR.; LEVIN-SOHN, MORRIS W.; DERAKHSHAN, IRAJ; & GUTIERREZ, YEZID. Reye syndrome and cerebellar intracytoplasmic inclusion bodies. Archives of Neurology, 32(9):624-628, 1975.

A neuropathological examination of a 5-year-old boy with Reye syndrome revealed cytoplasmic inclusion bodies in Purkinje cells of the cerebellum. The clinical history reported was consistent with Reye syndrome, and the autopsy findings of fatty metamorphosis of the liver and the cerebral edema substantiated that diagnosis. However, the finding of intracytoplasmic inclusion bodies in Purkinje cells was unexpected and had not been previously reported. Although the inclusions were similar to those observed in rabies infections, clinical and laboratory results and pathologic findings made a rabies infection unlikely. Electron microscopical examination determined that the inclusions contained internal particles, but these were not identifiable as virions, and results of viral studies were normal. The possibility of viral infection in this patient is acknowledged; the cause of Reye syndrome may be a susceptible host reaction to any one of a number of possible viruses, rather than being related to a specific virus. (36 refs.)

Division of Neurology Geisinger Medical Center Danville, Pennsylvania 17821

910 CAPPEL, R.; THIRY, L.; & CLINET, G. Viral antibodies in the CSF after acute CNS infections. Archives of Neurology, 32(9):629-631, 1975.

In 25 patients with acute viral central nervous system (CNS) infections and in 39 control patients, levels of cerebrospinal fluid (CSF) and serum viral antibodies were determined. Data were collected 2 weeks following the clinical onset of the infections. Antibodies were found in CSF specimens from 9 of the 13 patients with encephalitis or myelitis, and in only 1 of 9 CSF specimens from patients with viral meningitis infection. In view of these data, the titration of viral antibodies in the CSF may be helpful in determining the diagnosis of viral CNS infection. Also, since the antibodies found in the CSF are virus-specific, their determination may allow identification of the etiological agent, particularly when there is a concomitant increase of several antibodies in the serum as occurred for 1 of the patients examined. Data also suggest that localized production of antibodies occurs during the course of acute CNS infections, and that the respiratory syncytial virus can be associated with CNS infections in man. (15 refs.)

911 ELIAN, MARTA. Herpes simplex encephalitis: prognosis and long-term follow-up. Archives of Neurology, 32(1):39-43, 1975.

Electroencephalograms may be correlated with the severity of herpes simplex encephalitis. Seventy three EEGs of 11 patients with confirmed herpes simplex encephalitis were recorded daily or at intervals of a few days. The survivors who left the hospital were seen at roughly yearly intervals for follow-up; 2 patients were followed up for 3 years and 1 for 4 years. Repetitive complexes, which could be recorded at any time of the illness, were associated with a fatal outcome, while they seemed to be absent in survivors. Transitory spike discharges, which were not associated with clinical signs in 3 patients, were observed in long-term follow-up, along with a return to normal rhythmic activity. These findings indicate that EEGs may be used as a prognostic sign in herpes simplex encephalitis. (14 refs.)

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912 HERNDON, ROBERT M.; GRIFFIN, DIANE E.; MCCORMICK, URSULA; & WEINER, LESLIE P. Mouse hepatitis virus-induced recurrent demyelination: a preliminary report. Archives of Neurology, 32(1):32-35, 1975.

Evidence was found of persistence of a JHM viral infection which caused demyelination in BALB/c mice as late as 16 months after the initial infection, in spite of apparent remyelination. Four-week-old BALB/c mice were inoculated intracerebrally with the JHM strain of mouse hepatitis virus and subsequently developed an acute demyelinating disease. This was followed by apparent recovery with remyelination. Small areas of active demyelination were still present, however, when surviving mice were examined 16 months later. This seems to be the first reported example of an experimental viral infection in which acute demyelination with recovery was followed by persisting or recurring demyelination. (15 refs.)

Department of Neurology Johns Hopkins University School of Medicine 1721 E. Madison Street Baltimore, Maryland 21205 913 BURYAKOVA, ARIADNA V.; & *SYTIN-SKY, IGOR A. Amino acid composition of cerebrospinal fluid in acute neuroinfections in children. Archives of Neurology, 32(1):28-31, 1975.

The cerebrospinal fluid (CSF) amino acids, glutamine, and glutamic and gamma-aminobutyric (GABA) acids were surveyed in 168 children with neurological infections. The subjects ranged in age from 1 to 14 years and they all were suffering from encephalitis or a form of meningitis. Children with severe forms of acute serous and bacterial meningitis had about 3-4 times greater glutamic acid and glutamine concentrations in the CSF, compared to controls. During recovery, however, these indicators returned to normal. An interrelation was found between the acuity of the inflammatory process, the severity of the meningitis, the white blood cell values in the CSF, and the CSF content of glutamic acid and glutamine. Although GABA is absent in normal CSF, it was found in the CSF of patients with bacterial meningitis. The level of GABA may be used as an additional test to differentiate between serous and bacterial meningitis. (9 refs.)

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914 MARTIN, R. A.; BATES, D.; & SHAW, D. A. Cryptococcal meningoencephalitis. British Medical Journal, 3(5975):75-76, 1975.

A patient was admitted to the hospital with symptoms of a primary psychiatric disorder (confusion, disorientation, visual hallucinations), but laboratory tests aided in the diagnosis of cryptococcal meningoencephalitis. The only abnormality in the initial cerebrospinal fluid examination was a mild pleocytosis, which returned to normal by the second examination. However, a latex test showed that the serum was positive for cryptococcal antigens. Treatment was begun with amphotericin B, but when the patient developed a toxic reaction this drug was replaced with flucytosine. Her condition began to improve almost immediately, and no organisms were seen after 48 hours. Several other workers have reported mental changes and in some cases actual psychosis associated with cryptococcal meningoencephalitis. Serodiagnostic tests should be performed on all patients in whom the possibility of cryptococcal infection is considered. (17 refs.)

915 AXTON, J.H.M. Measles: a protein-losing enteropathy. *British Medical Journal*, 3(5975):79-80, 1975.

In 10 malnourished children with measles there was an appreciable protein loss from the intestine during the acute phase, although this was not as great as in regional enteritis or ulcerative colitis. The children were studied 2-14 days after the first appearance of a typical measles rash. Six children with moderate to severe kwashiorkor served as controls. All children were given intravenous injections of 10-15mcCi of chromium-51 chloride (51CrC13), and all subsequent stools passed were collected in 24-hour aliquots for 4 days. The difference in accumulated percentage of radioactivity excreted for the 2 groups was statistically significant on day 3, and the mean 4-day accumulated excretions in the measles and control groups were 5.56 percent and 2.68 percent, respectively. (5 refs.)

Department of Paediatric and Child Health University of Rhodesia Salisbury, Rhodesia

916 WEIBEL, ROBERT E.; BUYNAK, EUGENE B.; MCLEAN, ARLENE A.; & *HILLEMAN, MAURICE R. Long-term follow-up for immunity after monovalent or combined live measles, mumps, and rubella virus vaccines. *Pediatrics*, 56(3):380-387, 1975.

Follow-up investigations of earlier clinical studies on live measles, mumps, and rubella vaccines indicated that patterns for antibody following vaccination parallel those for natural infection and result in lasting immunity. No substantial decline in antibodies in human Ss was seen for 8 years after mumps vaccine (Jeryl Lynn); 6 years after measles (Attenuvax); or 5½ years after rubella (HPV-77 duck) vaccine. Antibody persisted for 5 years after combined measles-mumps-rubella and mumps-rubella vaccines; for 5 years after measles and rubella; and for 2 years after measles-mump vaccines. Subclinical reinfection (indicated by antibody increases) occurred in persons after vaccination as it does following natural infection. (20 refs.)

*Virus and Cell Biology Research Merck Institute for Therapeutic Research West Point, Pennsylvania 19486 917 CHANG, MARGAN J.; ESCOBEDO, MARILYN; ANDERSON, DONALD C.; HILLMAN, LAURA; & *FEIGIN, RALPH D. Kanamycin and gentamicin treatment of neonatal sepsis and meningitis. *Pediatrics*, 56(5):695-699, 1975.

Cerebrospinal fluid (CSF) and blood concentrations of kanamycin and gentamicin from 10 newborn infants with meningitis were measured by a radioisotopic assay procedure following intravenous administration of these antibiotics in 3 divided daily doses each. Serum concentration peaks occurred at 1 hour for kanamycin and at 2 hours with gentamicin, with peak concentrations of both agents at least equal to those reported in newborn infants who received equivalent intramuscular doses. Both antibiotics were generally nondetectable within the CSF. Newborn infants with gram-negative meningitis survived only when their strains were sensitive to ampicillin, which was administered concurrently. Parenteral administration of kanamycin or gentamicin using currently recommended dosages for neonatal meningitis due to gram-negative organisms may not be justified even when those organisms are sensitive to these agents in vitro. (20 refs.)

*Department of Pediatrics St. Louis Children's Hospital 500 South Kingshighway St. Louis, Missouri 63110

918 COLE, A. P.; & HAILEY, D. M. Diazepam and active metabolite in breast milk and their transfer to the neonate. *Archives of Disease in Childhood*, 50(9):741-742, 1975.

Because diazepam is metabolized more slowly in infants than in adults, continued medication of a lactating mother could lead to a toxic accumulation of the compound and its active metabolite (desmethyldiazepam) in breast-fed newborn infants. Breast-feeding infants whose mothers received diazepam before delivery, on the day of delivery, or during lactation showed no adverse clinical affects (other than 3 mild cases of iaundice), but measurable blood levels of diazepam and desmethyldiazepam were observed in a study of 9 infants. In 1 infant, appreciable amounts of active substances were detected 10 days after the mother was given a single dose of diazepam during labor. Breast feeding should be discontinued if alternative medication for the mother is not available, (6 refs.)

919 NICHOLLS, SHEILA; YILLE, T. D.; & *MITCHELL, R. G. Perinatal infections caused by Haemophilus influenzae. Archives of Disease in Childhood, 50(9):739-741, 1975.

In 2 cases of perinatal infection to noncapsulated *Haemophilus influenzae*, it is likely that the mothers were carrying the organism in the lower genital tract during pregnancy. Intrauterine infection probably occurred by the ascending route after membrane rupture, and organisms were recovered from both mothers and babies. One mother showed clinical signs of infection during labor, and the baby survived after treatment with ampicillin. The other mother was unaffected, but the baby died of severe hyaline membrane disease associated with bacteremia. *Haemophilus influenzae* was cultured from the lungs. (12 refs.)

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920 HAMBLETON, GARRY; & DAVIES, PAMELA A. Bacterial meningitis: some aspects of diagnosis and treatment. Archives of Disease in Childhood, 50(9):674-683, 1975.

Improvements in the prognosis of bacterial meningitis in children depend largely on early diagnosis. Mortality and morbidity rates will continue to be high, particularly in newborn infants, unless the disease is detected before specific signs appear. Diagnostic procedures include lumbar puncture, determination of cerebrospinal fluid glucose levels, and counterimmunoelectrophoresis. Oral antibiotics administered for infections which often precede meningitis may obscure the clinical course of the illness and make bedside diagnosis difficult. Intravenous, intramuscular, or intrathecal administration of appropriate antibiotics and supportive treatment should be started promptly. Drugs of choice for Haemophilus influenzae, one of the most common causes of childhood meningitis, are ampicillin and chloramphenicol. Carbenicillin, cloaxcillin, erythromycin, gentamicin, and kanamycin are used for other strains of meningitis. Preventive efforts are of primary importance. (15 refs.)

Department of Paediatrics and Neonatal Medicine Hammersmith Hospital London, England 921 Influenza vaccination. British Medical Journal, 4(5989):125-126, 1975. (Editorial)

Influenza vaccination this winter against influenza A/Port Chalmers/1/73, A/Scotland/840/74, and intermediate strains, together with influenza B/Hong Kong/5/72, should be conducted on a basis similar to the recommended procedure for the past year. An injection may be offered to those at special risk from the disease and may also be useful in residential institutions. Vaccination does not appear to be indicated for ordinary, healthy adults and children, but it may be considered for those particularly exposed to the disease. This year doctors may prescribe not only the usual killed, injected influenza vaccines but also, for the first time in Britain, a live, attenuated vaccine given in nose drops. The live vaccine has been derived from the A/England/42/72 strain of virus and induces protection against artificial challenge with A/Hong Kong virus, but field evidence of its protective effect against natural infection due to the homologous or related viruses is still lacking. Until it is clearly shown that A/England/42/72 live vaccine can protect against A/Port Chalmers and A/Scotland viruses as effectively as an up-to-date injected vaccine, the preferred prophylactic should probably be an inactivated vaccine. (6 refs.)

922 MOWAT, ALEX P.; & NEVILLE, B. G. R. Controlled trial of therapy in Reye's syndrome. British Medical Journal, 4(5988):102, 1975. (Letter)

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Since the pathophysiology of Reye's syndrome is so poorly understood, the value of the various forms of therapy which have been advocated can be determined only by well-conducted controlled trials. In a multicenter controlled trial organized by the Department of Pediatrics of Yale University (New Haven, Connecticut) in conjunction with some 8 units, supportive treatment as outlined previously (British Medical Journal, September 20, p. 662) is being compared with similar supportive measures aided by exchange transfusion, peritoneal dialysis, and glucose and insulin infusion. The preservation of serum, urine, and liver tissue from patients with Reye's syndrome by pathologists and clinicians will help to make these available for analysis as the pathophysiology of the condition is elucidated.

King's College Hospital London SE5, England 923 RENNERT, OWEN M. Drug-induced somatic alterations. *Clinical Obstetrics and Gynecology*, 18(4):185-198, 1975.

Teratogens, whether drugs or other agents, have a well-documented action on somatic cells that produces somatic mutation. From conception on. when a drug is administered to the female, it is administered simultaneously to the ovum or conceptus. Following placentation, the passage of a chemical agent to the fetal circuit becomes the major consideration. The transfer of such agents across the placenta takes place primarily by diffusion and is governed predominantly by their fat solubility, molecular weight, or both. Other factors influencing fetal transfer of an agent include distribution in the fetal and maternal extracellular space, binding of drugs to proteins in plasma and tissues, maternal excretion and metabolism, alterations in maternal and fetal blood flow, and coexisting pathologic states in the fetus and the mother. Presumably, the metabolism and biotransformation of various pharmacologic agents are altered by pregnancy. All of the normal physiologic changes associated with pregnancy should alter the rate of biotransformation as well as the potential mechanisms of transformation of various pharmacologic agents. Determination of these factors also will change, directly or indirectly, the potential teratogenic capacities of a given agent. (23 refs.)

Department of Pediatrics University of Florida College of Medicine Gainesville, Florida

924 MONIF, GILLES R. G. Viruses as teratogens. *Clinical Obstetrics and Gyne-cology*, 18(4):209-220, 1975.

Theoretically, viruses can function as teratogenic agents directly on the genes, at the preconceptional level, or indirectly, at the postconceptional level. In most cases, the virus-induced chromosome aberrations resemble those that occur *in vitro* and *in vivo* in cells following ionizing radiation or exposure to radiomimetic chemicals. Most chemical and physical agents capable of inducing chromatid aberrations are also capable of inducing gene mutations. Epidemiologic studies have shown a tendency for seasonal clustering of various trisomic states, suggesting the possibility of an association with an infectious agent. Of the viruses

capable of involving the products of conception in utero, only rubella virus and cytomegalovirus have an unquestioned ability to alter normal organogenesis. To function as a teratogen, an agent or compound must exert its influence at a specific time in terms of cellular differentiation or organogenesis. The neurotropism exhibited by the cytomegaloviruses is perhaps one of the best examples of this concept of time dependency. Both viruses result in panorgan involvement, the given malformation being at least in part a function of tissue regenerative capacity. As with infants with congenital rubella, intrauterine growth is retarded, and the organs contain a subnormal number of cells in infants with congenital cytomegalovirus. (20 refs.)

Department of Obstetrics and Gynecology University of Florida College of Medicine Gainesville, Florida

925 MONIF, GILLES R. G. Pragmatic decisions in viral teratology. Clinical Obstetrics and Gynecology, 18(4):237-244, 1975.

In the course of everyday practice, obstetricians are confronted with viral diseases superimposed on pregnancy. In cases of unknown adversaries, the initial focus of concern is any enhanced maternal morbidity and mortality. When supportive therapy can be instituted and the patient stabilized, the concern of the physician shifts to fetal considerations. Fetal outcome is independent of any course of therapeutic intervention. The physician can employ preventive medicine when confronted by a known adversary, such as rubella, for which the sequence of events that will combine to produce the disease can be predicted. While patients exposed to rubella constitute the most frequent management crisis, patients with viral exanthemas probably constitute the second most common clinical situation confronting obstetricians. Once maternal infection has been documented in the first trimester, counseling of the parents is appropriate. Amniocentesis provides a means of documenting fetal involvement. Prospectively, any population at risk and, thus, potential infectors within the hospital community must be identified.

The concept of herd immunity has been found to be less efficacious than anticipated, and the emphasis is shifting to selective protection of the female. (13 refs.)

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926 NORRIS, FORBES H., JR.; AGUILAR, MARY JANE; COLTON, ROBERT P.; OLDSTONE, MICHAEL B. A.; & CREMER, NATALIE E. Tubular particles in a case of recurrent lymphocytic meningitis followed by amyotrophic lateral sclerosis. Journal of Neuropathology and Experimental Neurology, 34(2):133-147, 1975.

Possible microscopic evidence of virus infection was seen in a man whose amyotropic lateral sclerosis (ALS) followed recurrent episodes of aseptic lymphocytic meningitis over a period of many years. Postmortem examination showed the neuropathologic changes of both lymphocytic meningitis and ALS. Electron microscopy revealed proliferation of endoplasmic reticulum (ER), small cytoplasmolytic areas, and focal neurofibrillar accumulations in axons. Interwoven, serpentine 10-15nm tubules first appeared with ER proliferation. At times, presumably at a later stage, they were present in large masses. It is possible that the tubules are viral material. They correspond to no known intraneuronal structure but do resemble myxovirus tubules. Thus far, however, virus cultures, including tissue culture, and animal inoculations have been negative. (28 refs.)

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927 MCCANDLESS, A. E.; DAVIS, C.; & HALL, E. G. Bone changes in congenital cytomegalic inclusion disease. Archives of Disease in Childhood, 50(2):160-162, 1975.

A female infant born with cytomegalic inclusion disease manifested bone changes in x-rays of the tibiae and femora. She was born 8 days postmaturely (birthweight 2.52kg) in a normal

delivery to a woman diagnosed as having influenza at 7 months' gestation. No drugs had been administered. The infant became jaundiced on the second day, and the liver and spleen were enlarged. On day 9 total serum bilirubin was 13.5 (unconjugated 6.8) mg/100ml. X-rays of the legs showed oval translucencies at the distal ends of both tibiae and faint longitudinal striations at the distal ends of both femora. At the age of 2 months the appearance had returned to normal. The jaundice disappeared gradually, and total serum bilirubin was less than 1mg/100ml by age 3 months. The liver and spleen were normal in size by age 3 years. The x-ray changes were considered to be due to disturbance of endochondral bone formation and not to viral osteomyelitis. (3 refs.)

Alder Hey Children's Hospital Eaton Road Liverpool L12 2AP, England

928 COOKE, R. W. I. Bacteroides fragilis septicaemia and meningitis in early infancy. Archives of Disease in Childhood, 50(3):241-243, 1975.

Bacteroides fragilis meningitis, a rare condition most often reported as a complication of chronic otitis media, occurred in a 7-week-old infant secondary to prolonged Bacteroides fragilis septicemia which occurred after fecal peritonitis. Peritonitis followed perforation of the small bowel at the constriction ring of a strangulated inguinal hernia. Initial treatment with intramuscular erythromycin (to which the Bacteroides isolate was fully sensitive in vitro) was only temporarily effective.

Hospital for Sick Children Great Ormond Street London WC1N 3JH, England

929 ERITH, M. J. Withdrawal symptoms in newborn infants of epileptic mothers. British Medical Journal, 3(5974):40, 1975. (Letter)

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Infants born to epileptic mothers often show drug withdrawal effects, including hypotonia, irritability, and vomiting. The vomiting tends to occur during the first 2 or 3 days following delivery and is usually confined to infants whose mothers have been taking barbiturates as their anticonvulsant

medication. The cases observed settled down rapidly after a single intramuscular dose of amylobarbital, although 1 infant, whose mother had uncontrolled epilepsy necessitating large doses of many anticonvulsants, took several days to recover. Withdrawal from anticonvulsants is a likely diagnosis in the case of neonatal vomiting.

General Hospital Northampton, England

930 SUTHERST, JOHN R.; & BURKE, MI-CHAEL. Rubella in pregnancy: a difficult diagnosis. British Medical Journal, 2(5972):685-686, 1975. (Letter)

A case is reported in which conflicting laboratory results caused the termination of a pregnancy after exposure to rubella in a woman who, in retrospect, seemed to be immune to rubella virus. While in her second pregnancy, the patient had a rubella hemagglutination inhibition (HAI) titre of less than 1/16 (a level at which most women are considered susceptible to infection). In the 10th week of her third pregnancy, she presented with a history of close and continuous contact with rubella and an HAI titre of 1/32 (measurable antibodies). From these data, it was concluded that the patient had contracted rubella early in her pregnancy, and the decision was made to terminate. However, it is possible that an uninfected pregnancy was terminated in this case, which emphasizes the need for puerperal immunization of susceptible women against rubella.

Department of Obstetrics and Gynaecology University of Liverpool Liverpool, England

931 UMETSU, M.; CHIBA, Y.; HORINO, K.; CHIBA, S.; & NAKAO, T. Cytomegalovirus-mononucleosis in a newborn infant. Archives of Disease in Childhood, 50(5):396-398, 1975.

Cytomegalovirus (CMV)-mononucleosis may be a possible clinical manifestation of CMV infection in the neonatal period. A 3-week-old hemophiliac who developed fever and mononucleosis had CMV infection, which may have been acquired by blood transfusions. The patient developed transient clinical jaundice with a hepatitis-like picture at 6

months and was still excreting CMV. Liver disease may be a clinical manifestation of CMV infection acquired in the early weeks of life. (9 refs.)

Department of Paediatrics Sapporo Teishin Hospital Sapporo, 060, Japan

932 ROBERTS, P. F. Thymic dysplasia, persistence of measles virus, and unexpected infant death. Archives of Disease in Childhood, 50(5):401-403, 1975.

Three weeks after clinical recovery from a measles attack an 18-month-old girl suddenly died in her cot. Terminal aspiration of vomit was the only obvious cause of death which could be found at postmortem examination. Histological examination showed persistence of measles virus, atypical lymphocytoid proliferation in the lymphoreticular system, and isolated deficiency of Hassall's corpuscles in the thymus. A possible relation of the thymic abnormality to the immunology of measles may be relevant to the etiology of sudden infant death syndrome. (6 refs.)

Department of Pathology Norfolk and Norwich Hospital Norfolk, England

933 Reye's syndrome. *British Medical Journal*, 3(5985):662-663, 1975.

Because a previously well child who has developed disturbances of consciousness or convulsions which rapidly proceed to coma presents a bewildering range of differential diagnoses, Reye's syndrome (encephalopathy with fatty degeneration of the viscera) is often not recognized, and its incidence may be higher than is generally recognized. The common course is rapid progressive deterioration of consciousness, with convulsions proceeding to coma and decerebrate posturing, death often following in 24-48 hours. There are no focal central nervous system signs, but vomiting may precede central nervous system symptoms. Hyperpnea or irregular respiration should arouse diagnostic suspicion, which can be confirmed only by doing liver function tests. Reye's syndrome is probably present if 2 of the following criteria are observed: aspartate aminotransferase level more than 21/2 times normal, prothrombin activity of less than 60 percent of normal, and blood sugar of less than 3mmol/I or cerebrospinal fluid glucose of less than 2mmol. Etiology and pathophysiology remain poorly understood, although some evidence links a variety of this syndrome to aflatoxin ingestion. Treatment of the syndrome is presently supportive and empirical, entailing correction of hypoglycemia, electrolyte abnormalities, acidosis, and hypoxia. (22 refs.)

934 HILL, F.G.H.; & LETSKY, ELIZABETH A. Infantile Kala-azar in Britain. British Medical Journal, 3(5979):354-355, 1975.

An increase in protozoal infections outside of endemic areas is exemplifed by the cases of 2 British children who developed kala-azar after holidays in Mediterranean countries. The children, who were successfully treated with sodium stibogluconate, presented with fever, splenomegaly, and pancytopenia. Diagnosis was confirmed by examination of bone marrow which revealed Leishman-Donovan bodies and by serological tests and culture of leptomonads from the aspirated marrow. In view of the importance of appropriate treatment of kala-azar, a child who has been in an area where leishmaniasis is endemic should be examined for this potentially curable disease. (3 refs.)

Hospital for Sick Children Great Ormond Street London WC1N3JH, England

935 GAL, ISABEL. Hormonal pregnancy tests and congenital malformations. *British Medical Journal*, 2(5973):749, 1975. (Letter)

In spite of detailed findings which indicate the teratogenic hazard of the hormonal pregnancy test, some practitioners have continued to use hormones for testing. A recent warning notice issued by the Committee on Safety of Drugs should be reinforced by changing the names of products which were formerly recommended for pregnancy testing and which are presently indicated for treatment of secondary amenorrhea not due to pregnancy, and continuing to remind physicians of unnecessary risks of using hormones for diagnosis or for abortion. (2 refs.)

Department of Biological Sciences Hatfield Polytechnic Natfield, Herts, England 936 SCOTT, H.; MOYNAHAN, E. J.; RISDON, R. A.; HARVEY, B. A.M.; & *SOOTHILL, J. F. Familial opsonization defect associated with fatal infantile dermatitis, infections, and histiocytosis. Archives of Disease in Childhood, 50(4):311-317, 1975.

A fatal illness in an infant characterized by exfoliative dermatitis, diarrhea, multiple bacterial infections, and failure to thrive is reported. The diagnosis was confirmed by demonstration of defective opsonification for yeast phagocytosis by the infant's serum and that of her relatives. The defect was observed in members of 4 generations of the patient's family, which is consistent with a dominant pattern of inheritance. But 2 of the family members were healthy (mother and maternal great-grandmother), and 1 (maternal grandfather) had chronic discharging osteomyelitis. The patient died with a beta-hemolytic streptococcal septicemia at 31 weeks of age. Necropsy revealed lymphoid depletion and massive histiocytic infiltration. The association of opsonification defect with chronic osteomyelitis in this family suggests that it may underlie a wider range of infective illness than the syndrome described by Miller. (12 refs.)

*Department of Immunology Institute of Child Health 30 Guilford Street London WC1N IEH, England

937 Treatment of herpes simplex. Medical Journal of Australia. 1(15):458, 1975. (Editorial) iı

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Application of cytosine arabinoside to herpes simplex lesions appeared to be extremely effective in a pilot study (Marks and Koutts, 1975); however, a double-blind controlled study showed no difference between the drug and a placebo. This drug has an inhibitory effect on the replication of the herpes simplex virus in vitro, and early good reports followed its use parenterally in systemic infections with the herpes zoster or herpes simplex viruses. The importance of type 2 genital herpes infections in relation to neonatal infections, and possibly to carcinoma of the cervix, makes it imperative that all methods of treatment are properly assessed before claims are made. (1 ref.)

938 BEARE, A. S.; SCHILD, G. C.; & CRAIG, J. W. Trials in man with live recombinants made from A/PR/8/34 (HO N1) and wild H3 N2 influenza viruses. Lancet, 2(7938):729-732, 1975.

A number of recombinant influenza viruses were produced from the non-virulent laboratory strain A/PR/8/34 (HO N1) and the newly isolated H3 N2 influenza virus variants. Some of the H3 H2 recombinants were sufficiently attenuated to study in man as potential live vaccines. The volunteer trials indicated that incomplete segregation of virulence and antigenecity were often present. These important factors must be taken into account in all recombinant studies in humans. (13 refs.)

Medical Research Council Common Cold Unit Harvard Hospital Salisbury, Wiltshire, England

939 Live influenza vaccine strains. *Lancet*, 2(7938):755-757, 1975. (Editorial)

The use of live influenza strains to confer immunity in humans is discussed. The recombination studies indicate that multiple genes are involved in the virulence of a strain. The possibility of utilizing the methodologies involved in producing some of the strains suggests that a desirable vaccine can be produced in the future. At least 2 groups have been able to produce attenuated viruses which may be usable as vaccines. But evidence is needed which relates to the potential of producing such viruses economically and delivering them in a simple, efficient, and acceptable manner. (12 refs.)

940 EDWARDS, J. R. Risk of rubella in pregnancy. *Medical Journal of Australia*, 1(12):407-408, 1975. (Letter)

The disastrous results of pregnancy occurring less than 12 weeks after rubella vaccine has been administered are stressed in response to the suggested postpartum immunization of women with negative hemagglutination tests. It is often difficult to ensure efficient methods of conception control in this period in patients who are breast feeding; those unwilling to use any form of conception control other than rhythm whose periods have not resumed regular patterns; and

patients who resume intercourse before seeking advice on contraception. For these reasons, rubella vaccine should not be administered until the most efficient method of birth control the patient will accept has been instituted. (1 ref.)

88 Queen Street Concord West Sydney, New South Wales 2138 Australia

941 BENJAMIN, DENIS R.; & RAY, C. GEORGE. Use of immunoperoxidase on brain tissue for the rapid diagnosis of herpes encephalitis. American Journal of Clinical Pathology, 64(4):472-476, 1975.

A simple immunoperoxidase technique was successful in identifying herpes simplex viral antigen in the infected brain cells of 4 of 5 culture-proven cases. One false-negative reaction was observed, but there were no false-positives. Results were rapid, with definitive diagnosis within 4 hours of biopsy. The immunoperoxidase method has a number of potential advantages over immunofluorescence, including easier interpretation of results; use of a cell suspension rather than frozen sections; permanance of preparations; and the need for a minimum of equipment (only a light microscope). As long as brain biopsy is used to diagnose herpes encephalitis, the use of immunoperoxidase for the identification of viral antigen in infected cells offers an alternative to immunofluorescence for establishing a rapid diagnosis. (13 refs.)

Department of Pathology Children's Orthopedic Hospital and Medical Center 4800 Sandpoint Way, N.W. Seattle, Washington 98105

942 Epidemic meningitis. Lancet, 2(7943):1051, 1975.

The World Health Organization's warning of a possible forthcoming series of cerebrospinal meningitis epidemics affecting not only Northern Africa but also countries in South America (Brazil, among others), the Middle East, Southern Africa, Asia, and Europe presents grave immunization difficulties. Vaccines against group A and group C meningococcal strains are available but cannot be

recommended for routine immunization of children; however, they should be used during epidemics, beginning with high-risk groups. Management of a meningococcal meningitis epidemic would be complicated where group B predominates (as in Britain) by the lack of a vaccine and by possible sulphonamide resistance.

943 EDMONDS, LARRY D.; FALK, HENRY; & NISSIM, JACK E. Congenital malformations and vinyl chloride. Lancet, 2(7944):1098, 1975. (Letter)

The relationship between higher rates of central nervous system malformations and increased risk of exposure to vinyl chloride was examined in 2 cities with polymerization plants, one in Pennsylvania and the other in Painesville, Ohio. Comparison of the central nervous system malformation rates for white infants born in these locales with the rates for white infants in each state revealed an increase, primarily in anencephaly and spina bifida, in the Painesville hospital for the period 1970-1974. None of the interviewed parents of Ss with malformations had ever worked at either of 2 polyvinyl chloride polymerization plants in Painesville, and none of the parents lived within 2 miles of the plants. The study did not reveal any association between central nervous system malformations in Painesville and vinyl chloride exposure. (5 refs.)

Cancer and Birth Defects Division Bureau of Epidemiology Center for Disease Control Atlanta, Georgia 30333

944 ILLIS, L. S., ed. Viral Diseases of the Central Nervous System. London, England, Bailliere Tindall, 1975, 226 p. £7.50.

British ideas about encephalitis and other viral diseases of the central nervous system are presented on the basis of a symposium held in Southampton (England) in 1974. The first half of the book deals with the epidemiology of encephalitis in Britain and the problems of EEG and laboratory diagnosis and of treatment with corticosteroids and antiviral chemotherapy. Arbovirus encephalitis is discussed, and the role of the pathologist as diagnostician and researcher is examined. The second half of the book is devoted to the spongiform encephalopathies. Clinical

features and human pathology are described, but the main emphasis is on the results of transmission experiments and other attempts to reproduce these disorders in animals.

Wessex Neurological Centre Wessex, England

945 KING, H.O.M. Kuru. Epidemiological developments. *Lancet*, 2(7938):761-763, 1975.

Important changes in the epidemiology of kuru in New Guinea since 1970 (continued decline in annual incidence, particularly in females; change of average age of onset; disappearance of cases in children and adolescents; and confinement of cases to the South Fore Region) support the hypothesis that the infective agent was transmitted through consumption of the bodies of kuru victims. If this theory of transmission is correct, the incidence of kuru could be expected to undergo significant changes as the length of time since cannibalism ceased to be practiced in the kuru region increases. The fact that overall incidence has been decreasing for some time and continues to do so supports the theory that the disease was transmitted by now discontinued mortuary practices and not by vertical transmission. (9 refs.)

Papua New Guinea Institute of Medical Research Goroka, Papua, New Guinea

946 ALVORD, ELLSWORTH C., JR.; SHUMAN, ROBERT M.; & LEECH, RICHARD W. Comments and questions on the neurotoxicity of hexachlorophene: Drs. Alvord, Shuman, and Leech reply. Pediatrics, 55(5):743-744, 1975. (Letter)

Dr. McCarl's 19 objections to our findings of a vacuolar encephalopathy related to hexachlorophene exposure can all be refuted. The sample used in the study was very representative of the whole pediatric population. The 7 premature children with no central nervous system changes ascribable to hexachlorophene baths may in fact have been protected, since UV light above 290nm dechlorinates hexachlorophene, and decreasing the number of chlorines on the bis-phenol skeleton of hexachlorophene decreases hexachlorophene toxicity. A diligent search for an undetected disease in

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the study populationindicated that only hexachlorophene exposure correlated with the vacuolar encephalopathy, and there was usually no other explanation for fatal "apnea" in infants with vcuolar encephalopathy. Dr. McCarl's objection to retrospective autopsy studies and his hypothesis concerning postmortem changes and artifacts due to poor fixation are groundless. One of our previous articles, in which the experimental model is developed in young rats, establishes the cause-and-effect of central nervous system changes and hexachlorophene baths with remarkably similar age-dose-response relationships to those discovered in the young human. (3 refs.)

Laboratory of Neuropathology Department of Pathology University of Washington School of Medicine Seattle, Washington 98195

947 MCCARL, G. W. Comments and questions on the neurotoxicity of hexachlorophene. Pediatrics, 55(5):742-743, 1975. (Letter)

Shuman et al. did not clearly substantiate the neurotoxicity of hexachlorophene in their pediatric study (54:689, 1974). The selection of the population was biased, with over 165 cases with unknown pathology excluded. A spectrum of changes associated with a high mortality was found to occur independently of exposure to hexachlorophene. Seven premature children reported on in earlier manuscripts had hexachlorophene baths with no ascribable related central nervous system changes, but these Ss were not included in the paper, since their bililight therapy (for kernicterus) was said to reduce the potential for hexachlorophene toxicity. The cases of exfoliative dermatitis described in the paper were Letterer-Siwe disease, where a 3 percent hexachlorophene solution was used (inappropriately) as a lotion and the skin was partially denuded. The retrospective nature of the study and the high-risk status of the population of prematures with a wide spectrum of postmortem findings further invalidate the cause-and-effect relationship of central nervous system changes and hexachlorophene baths in the study. (2 refs.)

Winthrop Laboratories 90 Park Avenue New York, New York 10016 948 KAEMMER, ARTHUR W.; JOHNSON, BYRON R.; GREENSHER, JOSEPH; & MOFENSON, HOWARD C. Question regarding need for treatment. *Pediatrics*, 56(4):621-622, 1975. (Letters)

A child with a normal physical and neurologic examination in whom the only evidence of systemic lead absorption was a single lead level of 64µg/100ml and radiographic interpretation of lead lines at the distal femoral metaphyses was treated with dimercaprol (BAL) and calcium ethylenediaminetetraacetic acid (EDTA). Treatment was initiated too hastily. Nevertheless, a single blood lead level measurement that is neither clearly low nor high will not indicate whether the lead level is on the decline or rise due to continued exposure to the lead source. The guidelines for treatment recommend that chelation therapy in the asymptomatic child with levels of 50-80µg/ml be limited to those with evidence of deranged heme synthesis or with anemia and excess storage of lead in bone. These children are treated with orally administered d-penicillamine. Children with levels above 80µg/ml are hospitalized and treated with BAL and calcium disodium edetate as pediatric emergency patients, even if they are asymptomatic. (4 refs.)

Department of Pediatrics Group Health Medical Center 355 Sherman Street St. Paul, Minnesota 55102

949 KELLEY, THOMAS W. Prolonged cerebellar dysfunction associated with paint-sniffing. *Pediatrics*, 56(4):605-606, 1975.

A 19-year-old girl manifested evidence of cerebellar damage after repeatedly sniffing various brands of spray paint, all containing toluene, for 1.5 years. The patient complained of increasing clumsiness, incoordination, and unsteadiness of gait for several months preceding neurologic evaluation. She had also experienced visual hallucinations. Cerebellar dysfunction secondary to the toxic toluene component of the paint was diagnosed. Follow-up 2.5 months after the initial visit indicated subjective improvement in general well-being and no progression of cerebellar signs, and neurologic examination 5 months after the patient discontinued paint-sniffing demonstrated objective improvement. An abnormal tandem gait persisted, however, and ataxia remained, primarily

on the right side. This case represents the second report of cerebellar impairment attributed to chronic toluene inhalation. (9 refs.)

Neurology Service Box 332 Tripler Army Medical Center APO San Francisco, California 96438

950 ALMEIDA, JUNE D.; BRAND, COLIN M.; EDWARDS, D. CAIRD; & HEATH, TIMOTHY D. Formation of virosomes from influenza subunits and liposomes. Lancet, 2(7941):899-901, 1975.

Electron microscopic examination of structures resulting from removal of the surface hemagglutinin and neuraminidase projections of influenza virus from the viral envelope, their purification, and their relocation on the surface of unilamellar liposomes revealed new bodies, virosomes, which resembled the original virus. Units of both the viral hemagglutinin and viral neuraminidase could be discerned. Preliminary data suggest that virosomes are both immunogenic and nonpyrogenic, and manipulation of the base on which the subunits are presented could constitute a means of improving adjuvanticity in the absence of increased pyrogenicity. (10 refs.)

Department of Virology Wellcome Research Laboratories Beckenham, Kent, England

951 HANSMAN, DAVID. Haemophilus influenzae type b resistant to tetracycline isolated from children with meningitis. Lancet, 2(7941):893-896, 1975.

Isolates of Haemophilus H. influenzae type b which were highly resistant to tetracyclines were obtained from a boy aged 11 months and a girl aged 1 year with meningitis and a girl aged 2 years with epiglottitis during a 3-year study of haemophili isolated from a total of 96 children with severe infections (73 with meningitis and 19 with acute epiglottitis). All 96 strains were identified as H. influenzae type b, and all were sensitive to ampicillin, chloramphenicol, trimethoprim, and sulphamethoxazole plus trimethoprim. The median minimal inhibitory concentration of tetracycline hydrochloride was $50\mu g/ml$, so the resistant strains had resistance

ratios of ≥50. Resistance was also demonstrated to doxycycline, oxytetracycline, and rolitetracycline and, in 1 strain, to minocycline. Inactivation of tetracyclines by the tetracycline-resistant haemophili was not demonstrated. (23 ref.)

Department of Microbiology Adelaide Children's Hospital North Adelaide, South Australia 5006

952 KLEIN, MICHAEL C.; & SCHLAGETER, MARY. Non-treatment of screened children with intermediate blood lead levels. Pediatrics, 56(2):298-302, 1975.

Within an aggressive lead screening and treatment program carried out in a family-focused neighborhood health center, 31 of 331 initially screened children with blood lead levels ≥40 µg/100ml were followed without treatment for a minimum of 18 months because of a bias against treatment, through active clinical management by a nurse practitioner. Subsequent venous blood lead determinations in the untreated cases showed a natural fall in lead level over 12 to 18 months. Many of these children would have been chelated by others, yet individualized, specific, personalized care by a nurse practitioner permitted monitoring without treatment even in persistently leaded environments. No treatment was necessary until the third summer, when rapidly rising lead levels forced treatment in 6 children. All 6 treated children had a rise in blood lead from an initial screening value of between 40 and 50 μ g/100ml to 60 to 80 $\mu g/100$ ml within 3 months. (11 refs.)

Department of Pediatrics University of Rochester School of Medicine and Dentistry Rochester, New York

953 INOUE, Y. K. The S.M.O.N. virus theory. *Lancet*, 2(7942):984, 1975. (Letter)

Evidence against a viral etiology of subacute myeloopticoneuropathy (SMON) is presented in the form of the clicquinol theory, one drawback of which is the infrequent association of clicquinol with SMON outside of Japan, despite worldwide use of the drug for many years. Newer information on the viral theory will be forthcoming. (1 ref.)

Institute for Virus Research Kyoto University Kyoto, Japan 954 ESCOBAR, JORGE A.; BELSEY, MARK A.; DUENAS, ALVARO; & MEDINA, PABLO. Mortality from tuberculous meningitis reduced by steroid therapy. *Pedia*trics, 56(6):1050-1055, 1975.

The effectiveness of steroid therapy as an adjunct to standard antitubercular therapy was evaluated by sequential analysis in 99 patients from the lower socioeconomic areas of Cali, Colombia, On admission, patients were classified by CA and state of consciousness, and matched pairs drawn from each of 9 categories were administered differential therapy in a double-blind fashion. During phase 1, 1 S in each pair received prednisone in a dose of 10mg/kg, and the other S received the drug in a dose of 1mg/kg. During phase 2, matched pairs received either 1 or 10mg of prednisone per kg or antituberculous drugs alone. The findings demonstrated that treatment of tuberculous meningitis with steroids in conjunction with antituberculous drugs is more effective in reducing mortality than treatment with antituberculous drugs alone. Another significant finding was that a low dose of steroids, 1mg/kg prednisone daily for 30 days, is just as effective as a higher dose, 10mg/kg prednisone at the onset of treatment, gradually reduced over a 30-day period, in the treatment of tuberculous meningitis. (23 refs.)

International Center for Medical Research Apartado Aereo 5390 Cali, Colombia

955 HALL, CAROLINE BRESSE; DOUGLAS, R. GORDON, JR.; & FRALONARDO, SHARON A. Live attenuated influenza virus vaccine trial in children. *Pediatrics*, 56(6):991-998, 1975.

An apparently safe, easily administered, nontransmissible, and immunogenic attenuated influenza A vaccine was administered intranasally to 34 children. Twenty-five of their classmates served as unimmunized contact controls. All but 1 of 31 children with preinoculation hemagglutination inhibition (HI) antibody titers of <64 responded with at least a 4-fold rise in antibody level after a single dose of vaccine; the 1 child who did not respond initially produced a significant antibody rise following a second dose. Seven (21 percent) of the vaccinees responded with detectable levels of nasal antibody as well. The extent of protection

was examined 5 months later during a natural outbreak in the community of a wild type influenza, a heterologous strain that represented a moderate degree of antigenic drift away from the strain used in the vaccine. A febrile or respiratory illness occurred in 6 (19 percent) of the vaccinees as compared with 12 (52 percent) of the contact controls, a difference significant at p<.02. Influenza A infection was confirmed in 2 of these 6 vaccinees by at least a 4-fold increase in HI titers to influenza B (32 and 64, respectively). (20 refs.)

Department of Pediatrics University of Rochester School of Medicine and Dentistry 601 Elmwood Avenue Rochester, New York 14642

956 Neuronal loss in infancy. *Lancet*, 2(7942):962, 1975. (Editorial)

Proper management of acute illness, especially acute neurological illness, in infancy may limit handicapping sequelae and represents a continuing challenge. A survey from Seattle, Washington, of the sequelae of enterovirus infections emphasizes the frequency of long-term deficits in children whose original illness was predominantly neurological. Of 19 infants and children in whom enterovirus infection was diagnosed between 1966 and 1972, 3 had definite and 9 others had possible neurological deficits on follow-up. Children whose original illness was in the first year of life had significantly smaller mean head circumference, lower mean measured intelligence, and poorer language skills than matched controls. Careful management of the acute illness, with control of seizures and of fluid and electrolyte balance and with treatment of brain swelling, may reduce handicaps. (2 refs.)

957 SHANNON, DANIEL C.; DE LONG, ROBERT; BERCUE, BARRY; GLICK, THOMAS; HERRIN, JOHN T.; MOYLAN, FERGUS M. B.; & TODRES, I. DAVID. Studies on the pathophysiology of encephalopathy in Reye's syndrome: hyperammonemia in Reye's syndrome. Pediatrics, 56(6):999-1004, 1975.

Some acid-base relationships were examined in the blood and cerebrospinal fluid of 16 patients with Reye's syndrome, 8 of whom died. The initial

acid-base status of the 8 survivors was characterized by acute respiratory alkalosis, while that of the children who died was associated additionally with metabolic acidosis. Early in the disease there was evidence of cerebral uptake of ammonia (299mg/100ml on day 1 and 90mg/100ml on day 2), while later there was cerebral release of ammonia (-43 and -55mg/100ml on days 3 and 4, respectively). Ammonia content of arterial blood was increased in proportion to the magnitude of hyperventilation in samples analyzed at the time of admission in all 16 patients. The arterial-jugular venous ammonia concentration difference varied directly with the calculated jugular venous excess lactate concentration. The presented data suggest that neurotoxicity in Reye's syndrome is due at least in part to impaired oxidative metabolism secondary to hyperammonemia. (21 refs.)

Massachusetts General Hospital Boston, Massachusetts 02114

958 THALER, M. MICHAEL. Pathogenesis of Reye's syndrome: a working hypothesis. Pediatrics, 1081-1084, 1975.

Clinical, pathological, and biochemical evidence point to the involvement of defects in urea cycle enzymes in the pathogenesis of Reye's syndrome. Combined deficiency of ornithine transcarbamylase and carbamyl phosphate synthetase may occur in most cases of Reye's syndrome, whereas isolated ornithine transcarbamylase deficiency due to inherent errors in enzyme structure appears to be the underlying abnormality in other patients. Treatment with ornithine or arginine may be most effective if instituted early in the course of encephalopathy, when vomiting, lethargy, and hyperammonemia are first noted. Where carbamyl phosphate synthetase deficiency is also present, treatment with citrulline may augment the elimination of ammonia by a secondary pathway. (22 refs.)

Department of Pediatrics University of California San Francisco, California 94143

959 ROMER, FRODE K. Previous antibiotic treatment and diagnosis of meningitis. Lancet, 2(7942):977, 1975. (Letter)

A lymphocyte pleocytosis in the cerebrospinal fluid of a 3-year-old boy with bacterial meningitis

was probably due to previous treatment with tetracycline for 2 days. During observation without antibiotic treatment, *Haemophilus influenzae* was detected in the cerebrospinal fluid, and ampicillin was started immediately, with good results. The subsequent course was uneventful. The patient had normal cerebrospinal fluid sugar. (3 refs.)

University Department of Medicine II Aarhus Amtssygehus Aarhus, Denmark

960 AVNER, ELLIS D.; SATZ, JAY; & PLOTKIN, STANLEY A. Hypoglycorrhachia in young infants with viral meningitis. Journal of Pediatrics, 87(5):833-834, 1975. (Letter)

A striking degree of hypoglycorrhachia was seen in patients in an enteroviral aseptic meningitis epidemic. Antibody studies were suggestive of Coxsackie virus B-2 in some cases. Thirty-six children were hospitalized, half of them under 2 months of age, and more than three-fourths under 2.5 years. In one-third of the patients studied, the cerebrospinal fluid (CSF) glucose concentration was less than 50 percent of a simultaneously obtained blood glucose, and in more than three-fourths of the patients, the CSF glucose concentration was less than 67 percent of a simultaneously obtained blood glucose determination. The lowest value recorded was a CSF glucose of 18mg/dl with a simultaneous blood sugar of 81mg/dl in a 7-week-old infant. (3 refs.)

Children's Hospital of Philadelphia 34 Civic Center Boulevard Philadelphia, Pennsylvania 19104

961 Center for Disease Control. Increased lead absorption and lead poisoning in young children. Journal of Pediatrics, 87(5):824-830, 1975.

The statement on lead poisoning by the Center for Disease Control provides revised recommendations regarding the screening, diagnosis, treatment, and follow-up of children for increased lead absorption and lead poisoning. An erythrocyte protoporphyrin (EP) test should be used for screening for lead poisoning followed by blood lead level tests for all children with positive EP. For uniformity, the

results of blood lead should be expressed in µg/dl of whole blood, and the results of EP, as equivalents of free erythrocyte protoporphyrin µg/dl of whole body by the ethyl acetate-acetic acid HCl extraction method. Pediatric management of lead poisoning must include appropriate treatment and adequate follow-up. Although indiscriminate chelation is unwise, due to the poorly explored potential hazards, withholding or delaying chelation therapy is also unwise when it is indicated for some children with undue lead absorption. The optimal frequency of follow-up visits is dependent upon a variety of factors, including the child's age, housing status, trend of laboratory results, and parental resources available. Hazard control and education of parents of children at risk are essential. Reporting of elevated findings to the appropriate health agency would facilitate a more meaningful analysis of the lead poisoning problem. (28 refs.)

962 MACFARLANE, DAVID W.; BOYD, ROBERT D.; DODRILL, CARL B.; & TUFTS, EMILY. Intrauterine rubella, head size, and intellect. *Pediatrics*, 55(6):797-801, 1975.

The assumption that congenital rubella is commonly associated with microcephaly and MR was investigated with 92 children selected from a rubella clinic population of 111 who had sufficient vision to permit testing by the Leiter International Scale. The mean IQ for this group was 99.46 (SD 19.5). Confirmatory measurements using the performance sections of the Wechsler Intelligence Scale for Children and the Stanford-Binet were obtained on a number of the children studied and found to be consistent. A plot of head circumference against stature showed a remarkably good correlation (r=.568, p<.001). In a smaller sample for whom parental data were available, a plot of head size against expected height relative to mean parental stature also yielded a good correlation (r=.599, p<.01). However, a plot of head size against IQ as measured by the Leiter Scale showed very poor correlation (r=.22). Regardless of the bias introduced by the exclusion of children with severe visual handicap, the data were considered supportive of the more optimistic prognostic views concerning the intellectual potential of children with intrauterine rubella syndrome surviving the neonatal period. (15 refs.) Crippled Children's Division University of Oregon Medical School 3181 S.W. Sam Jackson Park Road Portland, Oregon 97201

963 KLEIN, ROBERT B.; BLATMAN, SAUL; & LITTLE, GEORGE A. Probable neonatal propoxyphene withdrawal: a case report. *Pediatrics*, 55(6):882-884, 1975.

A 3,629gm white male infant born at 38 weeks' gestation to a 35-year-old diabetic mother who had been taking isophane insulin suspension (27) units initially and 100 units during the latter part of her pregnancy) routinely and was prescribed a mixture of propoxyphene napsylate (50mg) and acetaminophen (325mg) (Darvocet, taken 2 tablets every 4 hours, including a night-time dose, for 6 weeks prior to delivery) for right upper quadrant pain 2 months prior to term manifested flapping tremors, hypertonicity, shrill cry, seizures, and diarrhea, reflecting withdrawal symptomatology from maternal narcotic ingestion. Although the patient was born to a diabetic mother, his symptoms were considered quite different from those seen in complications of maternal diabetes. Propoxyphene and its metabolites were identified in the baby's serum and urine. Hyperactivity began to decrease on day 4 of life, and the stooling pattern reverted to normal. Hyperactivity ceased and the cry normalized on day 6. The patient remained asymptomatic for 7 additional days and had a normal feeding pattern and weight gain. Physical, neurologic, and developmental examinations since discharge have been entirely within normal limits. (15 refs.)

Department of Maternal and Child Health Dartmouth Medical School Hanover, New Hampshire 03755

964 KOPELMAN, ARTHUR E. Fetal addiction to pentazocine. *Pediatrics*, 55(6):888-889, 1975.

A 2180gm, small-for-date, black female infant delivered by cesarean section at 37 weeks' gestation manifested severe withdrawal symptoms following maternal use of pentazocine (Talwin), taken throughout the entire pregnancy in doses of 50mg every 4 hours as needed for pain. The mother, a 26-year-old gravida 3, para 0 woman

with sickle cell anemia, also took digoxin (0.25mg/day), multivitamins, folic acid (5mg/day), and propoxyphene hydrochloride (65mg every 4 hours as needed) throughout her pregnancy. At about 24 hours after delivery, tremors, hyperactivity, and marked hypertonia, associated with opisthotonic posturing, trismus, and inability to feed, began. Pentazocine withdrawal was suspected as the etiology of the symptoms. Pentazocine levels were documented in the cord blood and in the infant's blood and urine at 24 hours. Due to a moderately good symptomatic response to phenobarbital, the infant was able to tolerate oral feedings. The infant required phenobarbital for 17 days. This case is the second report of successful treatment of severe withdrawal symptoms with phenobarbital. (10 refs.)

University of Rochester School of Medicine and Dentistry 260 Crittenden Boulevard Rochester, New York 14642

965 PLOTKIN, STANLEY A.; & BRUNELL, PHILIP. Two points of view on herpesvirus vaccines. *Pediatrics*, 56(4):494-498, 1975.

The issue of whether or not to immunize humans with cytomegalovirus (CMV) or varicella-zoster (V-Z) vaccines, both of which are under evaluation as experimental vaccines, is a highly controversial one. In general, the possible baneful effects of attenuated CMV or V-Z viruses must be weighted against the actual effects of the wild viruses. Immunization with a CMV vaccine might result in a latent CMV infection which could increase rather than diminish the risk of fetal infection with CMV. In the case of a V-Z vaccine, prevention of primary and secondary disease must be distinguished. The need to prevent varicella is difficult to assess because of a scarcity of reliable data on complications in those who are not immunosuppressed. However, Reye's syndrome, postinfection encephalitis, nephritis, and pneumonia in adults are well-recognized complications of the disease. Immunocompromised patients, at greater risk of dying or developing severe illness than normal children, would not be candidates for immunization with a live virus vaccine. Morbidity among the high-risk group can be reduced effectively by other means. An enormous amount of morbidity is caused by the zoster endogenous reactivation of V-Z virus, and induction of an anamnestic response might reduce the likelihood

of reactivation. On the other hand, the contention of V-Z vaccine proponents that "an attenuated vaccine virus is unlikely to become virulent and cause herpes zoster" is unsubstantiated. (41 refs.)

Division of Infectious Diseases Children's Hospital of Philadelphia 34 Civic Center Boulevard Philadelphia, Pennsylvania 19104

966 SOFFER, DOV; RANNON, LOTTE; ALTER, MILTON; KAHANA, ESTHER; & FELDMAN, SHAUL. Subacute sclerosing panencephalitis: an epidemiological study in Israel. Transactions of the American Neurological Association, 100:243-245, 1975.

Epidemiological data from 52 Israeli patients with subacute sclerosing panencephalitis (SSPE) suggest that the risk of exposure may be influenced by family size and birth order. The disorder, which is related to a measles virus infection in the first 2 years of life, was found to be more frequent among males, residents of rural areas, Ss from large families, and Ss of low socioeconomic status. The disease was about 3 times more common in Arabs and Sephardi lews than in Ashkenazi lews, but genetic factors do not seem to be involved. SSPE is rare in familial aggregates, and few sibships with more than 1 patient have been reported. Although data on birth order of patients were not available, at least 1 previous study has reported that patients with SSPE tend to be younger than their siblings.

967 WILKINS, JEANETTE. Late seroconversion following HPV-77, DE5 rubella virus vaccine. American Journal of Obstetrics and Gynecology, 121(7):998-1002, 1975.

Hemagglutination inhibiting antibody response to HPV-77, DE5 rubella virus vaccine in 258 rubella-susceptible children indicated that seroconversion often did not take place until more than 28 days after inoculation, and maximum seroconversion ratios were not demonstrated until 7 weeks post inoculation. In the HPV-77 and other HPV-77 derived predecessors to the HPV-77, DE5, seroconversion usually has been shown by 28 to 30 days after inoculation. Since there is no evidence suggesting that children show different serologic responses from adults following vaccination with the newer vaccine, the apparently greater

attenuation of the HPV-77, DE5 vaccine has important implications in regard to rubella susceptible women of childbearing age. A vaccine showing an early and predictable conversion ratio is desirable for routine immunization of this group. Comparative serologic data are needed for the Cendehill or the candidate RA 27/3 rubella vaccine. (17 refs.)

LAC/USC Medical Center Hastings Infectious Disease Laboratory 1129 N. State Street Los Angeles, California 90033

968 DUDGEON, J. A. Congenital rubella. *Journal of Pediatrics*, 87(6, part 2):1078-1086, 1975.

United States and British studies relating to congenital rubella indicate an expanding knowledge of clinical manifestations and consequences for the fetus. MR, autism, respiratory and nervous system damage, lowered resistance to infection, multiple defects, and fetal loss are among the sequelae which have been added to the originally recognized triad of anomalies affecting the eye, heart, and hearing organs. A multifactorial concept of pathogenesis is related to the immunologic response of the fetus and possible mechanisms of tissue damage. Of 3 tests for diagnosis and surveillance of congenital rubella defects, the hemagglutinin inhibition test is the most effective. Although active immunization is the most effective and durable form of artificial immunization, pregnancy is the major contraindication to the use of rubella vaccines. Immunization policies in the United States and Britain are compared, and the importance of a surveillance program for congenital rubella defects is stressed. (35 refs.)

Institute of Child Health University of London London, England

969 CHISOLM, J. JULIAN, JR.; BARRETT, MAUREEN B.; & MELLITS, E. DAVID. Dose-effect and dose-response relationships for lead in children. *Journal of Pediatrics*, 87(6, part 2):1152-1160, 1975.

A reexamination of the serious effects of lead poisoning from the viewpoints of critical organ and critical effect concepts indicates that the dose-response concept is a better way of viewing the relationship between blood lead and measures of adverse effect than the other classifications (sensitivity, specificity, false negatives) which are often used in the evaluation of screening tests. The dose-effect relationship, in which a quantitative change in a function or concentration of a metabolite is related to a quantitative change in the concentration of a toxic substance, recognizes individual uniqueness and the presence of susceptible and resistant individuals in heterogeneous population groups. Individuals may be classified as reactors or nonreactors with the dose-response concept in terms of whether they exhibit the various indicators of lead's critical (or first) effect. Erythrocyte protoporphyrin is potentially the most practical of the various indicators of lead's critical effect on hemoglobin synthesis for monitoring children at high risk for plumbism. (23 refs.)

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970 WRIGHT, PETER F.; SELL, SARAH H.; SHINOZAKI, TATSUHIKO; THOMPSON, JULIETTE; & KARZON, DAVID T. Safety and antigenicity of influenza A/Hong Kong/68-ts-1 E (H₃N₂) vaccine in young seronegative children. *Journal of Pediatrics*, 87(6, part 2):1109-1116, 1975.

The safety and antigenicity of influenza A/Hong Kong/68-ts-1 E (H₃ N₂) were assessed through intranasal administration to 18 seronegative children 14 to 32 months old in a double-blind, controlled design. Sixteen children had a 4-fold or greater rise in hemagglutination-inhibition (HAI) antibody. The febrile reaction experienced by some children may have been due to vaccine, although intercurrent illnesses may also have caused it. The temperature sensitive marker of the vaccine was not genetically stable in 4 of the vaccinated children. These 4 were among the 14 children who shed the vaccine for a mean of 8 days following vaccination. Safety of the vaccine is yet to be fully demonstrated in young children. (13 refs.)

Department of Pediatrics Vanderbilt University School of Medicine Nashville, Tennessee 971 PARTIN, JOHN C.; PARTIN, JACQUE-LINE S.; SCHUBERT, WILLIAM K.; & MCLAURIN, ROBERT L. Brain ultrastructure in Reye's syndrome. *Journal of Neuropathology and Experimental Neurol*ogy, 34(5):425-444, 1975.

Cerebral biopsies were obtained for electron microscopy 48 and 72 hours after the onset of encephalopathy from a 6-year-old girl with severe Reye's syndrome. Gravely ill at the time of craniectomy to relieve cerebral hypertension, the child survived and recovered good brain function. The biopsy findings therefore appear to reflect the organelle pathology of the brain at a severe yet reversible stage in the disease process. Cardinal ultrastructural changes in the brain were astrocyte swelling and partial deglycogenation, myelin bleb formation, and universal injury of neuron mitochondria. The mitochondrial injury consisted of matrix disruption with moderate but not massive matrix swelling. Dilatation of rough endoplasmic reticulum and nuclear changes occurred only in neurons with severely altered mitochondria. The organelle pathology of the brain did not resemble the organelle pathology of the brain in human "hepatic encephalopathy" or in experimental ammonia intoxication in primates. The mitochondrial ultrastructure of the cerebral neurons resembled the unique mitochondrial ultrastructural changes seen in the liver parenchyma in Reye's syndrome. (47 refs.) (Author abstract modified)

Department of Surgery University of Cincinnati Medical School Cincinnati, Ohio 45229

972 MOOTY, JOYCE; FERRAND, CHARLES F., JR.; & *HARRIS, PAUL. Relationship of diet to lead poisoning in children. Pediatrics, 55(5):636-639, 1975.

Forty-six children (CA 24 to 47 mos) with blood lead levels in the 10 to $25\mu g/100ml$ range (25 controls) or greater than $50\mu g/100ml$ (21 Ss predominantly black), all patients at a neighborhood health center, were studied to ascertain the presence or absence of a relationship between dietary intake and plumbism in children from low-income families. Dietary intakes were determined by a nutritionist in single-blind interviews with the mothers and were calculated to estimate

the average daily consumption of total calories. protein, and iron. The mean intakes for calories and protein calculated as percent of the recommended dietary allowances were equal and adequate for both Ss and controls, but iron intake was low and not statistically different for both groups. Mean hemoglobin and hematocrit levels for both groups were essentially the same and fell in the anemic range. Ss were shorter and weighed less than controls. Except for a threefold prevalence of pica among children with plumbism (71 percent), there were few demographic or social distinctions between the 2 groups. The findings support the observation of a higher prevalence of plumbism among black children in the area and suggest that some psychosocial factor(s) not investigated, such as poor housing conditions or deficiency of maternal nurturing, may be responsible for childhood plumbism. (23 refs.)

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973 CH'IEN, LAWRENCE T.; WHITLEY, RICHARD J.; NAHMIAS, ANDRE J.; LEWIN, EDWARD B.; LINNEMANN, CALVIN C., JR.; FRENKEL, LAWRENCE D.; BELLANTI, JOSEPH A.; BUCHANAN, ROBERT A.; & ALFORD, CHARLES A., JR. Antiviral chemotherapy and neonatal herpes simplex virus infection: a pilot study—experience with adenine arabinoside (ARA-A). Pediatrics, 55(5):678-685, 1976.

Eight newborn infants with disseminated herpes simplex virus (HSV) disease, 1 with localized central nervous system (CNS) disease, and 4 with localized infection involving the skin and/or eyes only received adenine arabinoside (ara-A), a purine nucleoside with antiviral activity against DNA viruses. Ara-A was administered in a dosage of 10 to 20mg/kg/day by continuous 12-hour intravenous drip for 10 to 15 days beginning within 3 to 8 days after the appearance of skin vesicles, which appeared to be the hallmark of neonatal HSV infection in all 3 groups. However, among infants with disseminated infection or localized CNS disease, both diagnosis and ara-A treatment were greatly delayed in 1 infant without skin vesicles and in 4 infants whose skin vesicles appeared late, long after the occurrence of CNS damage; 4 of these infants died, and the survivor

had microcephaly. Four other infants with disseminated and 4 with localized skin disease manifested skin vesicles as the initial sign of disease; all were treated with ara-A early, within an average of 2.5 days after the onset of neurologic symptoms, and survived with no neurologic deficit at 6 months to 1 year of age. Within the dosage of ara-A employed, there was no clinical evidence of toxicity. (40 refs.)

Department of Pediatrics Room 609, C.D.L.D. Building University Station Birmingham, Alabama 35294

974 TAMBORLANE, WILLIAM V., JR.; & *SOTO, EMILIO V. Citrobacter diversus meningitis: a case report. Pediatrics, 55(5):739-741, 1975.

A 6-week-old female infant presented with a 1-day history of irritability, vomiting, and fever, and Citrobacter (C.) diversus resistant to ampicillin, carbenicillin, and penicillin but sensitive to cephalothin, chloramphenicol, colistin, gentaminicin, kanamycin, and tetracycline was identified on the third hospital day from the initial cerebrospinal fluid culture. Antibiotic therapy consisting of a 3-week course of intramuscularly administered gentamicin, 1 week of intrathecally administered gentamicin at 2mg/kg and a second week at 1mg every other day, and 3 weeks of intravenously administered chloramphenicol was begun. Antibiotics were discontinued on day 24; head circumference measured 37.5cm. Five days later, the patient was noted to be lethargic and head circumference had increased. With the circumference measuring 40cm, a ventriculogram showed moderate to severe hydrocephalus secondary to aqueductal stenosis, but no cystic lesions were found. A Pudenz-Ramondi ventriculoperitoneal shunt was placed. Head circumference was 37cm at discharge. Follow-up at age 6 months showed normal development and neurologic examination with a head circumference of 41 cm. This communication represents the ninth reported case of neonatal meningitis secondary to C. diversus in the English literature. (7 refs.)

Department of Pediatrics Fairfax Hospital 3300 Gallows Road Falls Church, Virginia 22046 975 PETER, GEORGES; & SMITH, DAVID H. Haemophilus influenzae meningitis at the Children's Medical Center in Boston, 1958 to 1973. Pediatrics, 55(4):523-526, 1975.

Three hundred ninety-seven children with Haemophilus (H.) influenzae b meningitis were admitted to the Children's Hospital Medical Center, Boston, Massachusetts, between 1958 and 1973. The annual rate of admissions for bacterial meningitis. including those due to H. influenzae b, was not markedly different from that of the preceding decade. In relation to the total number of admissions, the proportion of hospitalizations for bacterial meningitis and H. influenzae b declined during the study period. The age incidence for H. influenzae b was strikingly similar to that reported from the hospital for the period 1920 to 1932, with approximately 70 percent of cases occurring between 6 and 36 months of age. The case fatality rate from 1961 to 1973 for children with any bacterial meningitis and H, influenzae b meningitis was 2.2 percent and 1.6 percent, respectively. Only 2 deaths from H. influenzae b meningitis occurred between 1965 and 1973. (21 refs.)

Section of Human Growth and Development Division of Biological and Medical Sciences Brown University Providence, Rhode Island

976 *MANIELLO, ROBERT L.; & **SOULE, A. BRADLEY, III. Can neonatal assessment predict withdrawal symptoms? *Pediatrics*, 55(4):573-574, 1975. (Letters)

Dr. Maniello points out that although the Brazelton Neonatal Scale is clinically useful in predicting the physiologically distressed infant, its influence on the therapeutic management of the addicted newborn is somewhat tenuous. Hyperirritability in these neonates is "consolable," with swaddling alone shown to decrease the amount of medication needed for treatment. Moreover, the type of withdrawal varies, methadone babies presenting the more severe symptoms, resulting in the medical treatment of approximately 66 percent of them. Since it is not unusual for a methadone-addicted infant to have relatively mild withdrawal signs in the first few days of life and suddenly severe symptomatology on days 7 to 14, it is questionable whether neonatal assessment

testing is of predictive value in spotting this type of infant. Dr. Soule replies that while the Brazelton Scale was an early indicator of (impending) withdrawal, forecasts of neonatal behavior 1 week hence were not made owing to the limited sample. (7 refs.)

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977 DECASTRO, F. J.; LAZZARA, J.; ROLFE, U. T.; & ENGELER, E. Increased lead burden and the energy crisis. *Pediat*rics, 55(4):573, 1975. (Letter)

The lead burden of a 5-year-old boy was increased probably by inhalation of fumes from lead-base-painted wood burned for heating purposes in an old faulty furnace. While asymptomatic, his blood level was $67\mu g/100ml$ (atomic absorption). Inspection of the house revealed that it was dilapidated, and contained lead, and also had a faulty furnace. Attempts to delead the house were unsuccessful, but the family was counseled effectively against burning painted wood in the furnace. Following chelation therapy and counseling against burning painted wood, the child's blood lead level was $40\mu/100ml$. The level of the mother, who slept in

another room, away from the furnace, was 38µg/100ml. (1 ref.)

Department of Pediatrics St. Louis, Missouri

978 ALBERS, WILLIAM H. The need for control study in Reye's syndrome. Pediatrics, 55(4):569-570, 1975. (Letter)

An appropriately controlled study is needed to clarify the role of peritoneal dialysis in Reye's syndrome. Samaha et al. have reported 9 survivors among 11 patients treated by peritoneal dialysis and only 2 survivors of 13 patients treated without dialysis. Unfortunately, the 2 groups were treated during different time periods, and 8 of 11 dialyzed patients but no nondialyzed patients also received arginine infusions. Samaha et al. subsequently reported only 2 survivors among 11 additional cases treated by peritoneal dialysis. Personal experience has indicated the hazards of judging the therapeutic effectiveness of peritoneal dialysis in this disease on the basis of a small number of uncontrolled observations. Four patients with typical Reye's syndrome, all of whom have survived, were treated with the hepatic coma regimen similar to that of Samaha et al. Three patients rapidly improved on symptomatic therapy, including 1 patient admitted to the hospital in stage 3 coma. Peritoneal dialysis was instituted in 1 case, a patient who remained deeply comatose after 18 hours, but was not considered to be responsible for his survival. (2 refs.)

Department of Pediatrics St. Francis Hospital Peoria, Illinois

MEDICAL ASPECTS — Etiologic Groupings Hemolytic disorders

979 WILLCOX, M. C. Thalassaemia in northern Liberia. A survey in the Mount Nimba area. Journal of Medical Genetics, 12(1):55-63, 1975.

Elevated hemoglobin A₂ level was the main criterion for determining the incidence of beta-thalassemia in Northern Liberia. An average incidence of 9 percent was found, with consider-

able tribal variation. The highest rates were usually found in tribes with a low incidence of hemoglobin S. Other results included: 1) a single example of delta beta-thalassemia; 2) a 1.8 percent incidence of delta-chain variants; 3) a negligible effect of malaria on hemoglobin A₂ levels; and 4) increased levels of hemoglobin Barts in 10 percent of the newborn infants. Because Liberia seems to have the highest reported incidence of beta-thalas-

semia in a purely black population, it is a suitable area for investigating the linkage of beta and delta chain variants. (33 refs.)

Bakteriologiska Laboratoriet Gavle Sjukhus, S-800 07 Gavle, Sweden

980 CHAVALITDHAMRONG, P-O.; ESCO-BEDO, M. B.; BARTON, L. L.; ZARKOW-SKY, H.; & *MARSHALL, R. E. Hyper-bilirubinaemia and bacterial infection in the newborn. A prospective study. Archives of Disease in Childhood, 50(8):652-654, 1975.

Sixty-nine infants under 2 weeks of age were assessed to determine the incidence of bacterial infection associated with unexplained hyperbilirubinemia. Bacterial infection was found in only 3 percent of the newborn infants with hyperbilirubinemia. None of the 60 blood or cerebrospinal fluid cultures yielded a bacterial infection was documented in 2 infants with asymptomatic gram negative urinary tract infections, but data are not sufficient to document a cause-effect relationship. (8 refs.)

*St. Louis Children's Hospital 500 S. Kingshighway St. Louis, Missouri 63110

981 MILNER, R.D.G.; & RATCLIFFE, J. G. Thyroid function during exchange transfusion. Archives of Disease in Childhood, 50(1):40-44, 1975.

Changes in plasma thyroid hormone concentration studied in 19 newborn infants during exchange transfusions performed for hemolytic disease indicated that erythroblastotic infants have normal thyroid function and that they become biochemically hypothyroid during transfusions. Before transfusion, the plasma thyrotropin (TSH) levels of the infants fell as postnatal age increased and plasma tri-iodothyronine (T₃) and serum thyroxine (T4) were correlated with one another. In 20 out of 24 transfusions the mean infant/donor ratio of TSH was approximately 10, of T4 3, and of T₃ 2. There was a progressive fall in the infant's plasma TSH, T4 and T3 concentration during these transfusions. Plasma TSH levels rose during transfusion in 3 cases in which the donor plasma TSH was greater than that of the infant. This was associated with a late rise in plasma T₃ levels in 2 cases. Although glucagon in pharmacological doses stimulates thyroid metabolism *in vitro*, the addition of glucagon to donor blood had no effect on thyroid hormone levels. (19 refs.)

SCBU 5th Floor St. Mary's Hospital Manchester M13 OJH, England

982 ROMAGNOLI, C.; POLIDORI, G.; FOSCHINI, M.; CATALDI, L.; DE TUR-RIS, P.; TORTOROLO, G.; & MASTRAN-GELO, R. Agar in the management of hyperbilirubinaemia in the premature baby. Archives of Disease in Childhood, 50(3):202-204, 1975.

Investigation of low birth weight babies (1500 to 2500g) showed that agar supplemented feedings are not indicated in the management of hyperbilirubinemia. Serum bilirubin levels were not significantly lower in agar-fed babies than in controls when: 1) infants received a total amount of 600mg/kg of agar beginning at 12 hours of age for 7 days, or 2) infants received a total of 700mg/kg daily beginning at 6 hours of age for 7 days. No complications were observed in agartested babies. It is possible that the enterohepatic circulation of bilirubin plays no significant part in the mechanism of hyperbilirubinemia in premature infants. (8 refs.)

Clinica Pediatrica Universita Cattolica del S. Cuore Largo A. Gemelli 8, 00168 Roma, Italy

983 ARROWSMITH, W. A.; PAYNE, R. B.; & *LITTLEWOOD, J. M. Comparison of treatments for congenital nonobstructive nonhaemolytic hyperbilirubinaemia. Archives of Disease in Childhood, 50(3):197-200, 1975.

Although 20 hours of phototherapy a day has succeeded in keeping serum bilirubin levels of a patient with Crigler-Najjar disease within safe limits, it may have limited her normal development by requiring prolonged hospitalization. In a search for supplementary treatments which allow some periods at home, cholestyramine, aspartic

acid, and a high fat diet were tested. Although interpretation of results is difficult, there was a statistically significant fall in serum bilirubin concentration with time during all 3 treatment regimes. Cholestyramine was the most successful and most easily applied supplementary therapy. It allowed the amount of phototherapy to be reduced and enabled the patient to spend some time at home during the day. Vitamin supplements were given in view of the known possible complications of long-term cholestyramine therapy, and alkaline phosphatase levels and promothrombin time were checked periodically.

*Seacroft Hospital York Road Leeds LS14 6UH, England

984 WOODFIELD, D. GRAEME; & BID-DULPH, JOHN. Neonatal jaundice and glucose-6-phosphate dehydrogenase deficiency in Papua New Guinea. *Medical Journal of Australia*, 1(14):443-446, 1975.

A study of 50 jaundiced newborn infants in Papua, New Guinea, indicated that glucose-6-phosphate dehydrogenase (G6PD) deficiency must be considered in the differential diagnosis of neonatal jaundice in this population. Eleven of the infants were found to be G6PD deficient. There were no apparent exogenous precipitating causes for the jaundice. Of the G6PD-deficient infants, 7 had serum bilirubin levels exceeding 20mg/100ml. Three required exchange transfusions. The high frequency of G6PD deficiency in Papua and the association of G6PD deficiency and neonatal jaundice in other countries have practical implications for the clinical management of newborn infants.

Red Cross Blood Transfusion Service P.O. Box 1174 Boroko, Papua, New Guinea

985 ELDOR, A.; YATZIV, S.; & HERSHKO, C. Relapsing Coombs-negative haemolytic anemia in pregnancy with haemolytic disease in the newborn. *British Medical Journal*, 4(5997):625, 1975. (Letter)

A rare Coombs-negative transient hemolytic disease restricted to the period of pregnancy developed in a woman in the third month of her

second and third pregnancies and in her delivered infants at age 4 weeks. A reticulocytosis of 15 percent and a high transferrin saturation were documented in the second of these infants. Despite the absence of a positive antiglobulin reaction, the mechanism responsible for hemolysis in this patient was probably autoimmune. (5 refs.)

Department of Haematology Hadassah University Hospital Ierusalem, Israel

986 LAURITSEN, J. GLENN; GRUNNET, N.; & JENSEN, O. MYHRE. Materno-fetal ABO incompatibility as a cause of spontaneous abortion. Clinical Genetics, 7(4):308-316, 1975.

In a study of 288 consecutive spontaneous abortions occurring during the first 16 weeks of pregnancy, blood was collected from both parents (a total of 555) for ABO blood grouping and karyotyping, and blood groups of the fetuses were determined by the immunofluorescence technique and mixed cell agglutinating reaction in fetal tissue. Blood grouping data were compared with the ABO blood group frequencies of 8818 blood donors from the same area. There were 167 compatible and 96 incompatible matings, the latter being found in 44 percent of abortions with normal karyotype as compared with 28 percent of abortions with abnormal karyotype (p<0.01). The frequencies of blood groups A and B were higher than expected in abortuses with normal karyotypes and lower than expected in those with abnormal karyotypes. The frequency of maternofetal incompatible pregnancies was significantly higher in the group of abortions with karyotypically normal fetuses (p<0.005). No significant difference was found when the total ABO frequencies of the abortuses and of their parents were compared with the frequencies in the control group. (16 refs.)

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987 ANTTOLAINEN, I.; SIMILA, S.; & WALLGREN, E. I. Effect of seasonal variation in daylight on bilirubin level in premature infants. Archives of Disease in Childhood, 50(2):156-157, 1975.

Thirty-six preterm infants born during the light half of the year (March 1971 to August 1971) and 40 preterm infants born during the dark half of the year (September 1971 to February 1972) were compared for the effect of the seasonal increase in daylight on bilirubin level. The babies were treated in incubators, where they were completely exposed except for diapers. The mean total serum bilirubin values for days 2, 4, 6, 8, and 10 were all lower in the light group, and from the age of 4 days the difference between the 2 groups was significant (p<0.05). Only 4 infants in the light group but 10 infants in the dark group developed total bilirubin levels higher than 255µmol/l. The infants in the light group and 4 in the dark group required exchange transfusion. (7 refs.)

Department of Paediatrics Keski-Pohjanmaa Central Hospital SF-67200 Kokkola, Finland

988 WEBSTER, A.D.B.; SLAVIN, G.; STREL-LING, M. K.; & ASHERSON, G. L. Combined immunodeficiency with hyperγ-globulinaemia. Archives of Disease in Childhood, 50(6):486-490, 1975.

A 2-month-old boy who died of pneumonia had a major defect in cell-mediated immunity and apparent failure to produce functional antibodies despite raised serum immunoglobulin concentrations. Hyper-gamma-globulinemia was clearly out of proportion to that seen in normal individuals after injection. Rise in serum immunoglobulins may have been related to the pneumocytis carinii infection, and intense antigenic stimulation from the lungs could have accounted for plasma cell infiltrate of the mediastinal lymph nodes. The case may belong to a subgroup of severe combined immunodeficiency disorders characterized by a tendency to develop hyper-gamma-globulinemia spontaneously. Although treatment of choice is not well defined for this subgroup, initial thymus graft is suggested, followed by a bone-marrow graft if further measures are needed. (8 refs.)

Northwick Park Hospital C.R.C. Harrow Middlesex HAI 3UJ, England

989 COULTER, J.B.S.; & RAINE, P.A.M. Rupture of the spleen in erythroblastosis fetalis. Archives of Disease in Childhood, 50(5):398-400, 1975.

A male infant of 36 weeks' gestation (3080 grams) with erythroblastosis, ruptured spleen and bilateral suprarenal hemorrhages survived after exchange transfusion and splenectomy. An unusual feature of the case was low serum bilirubin. The presence of hemoperitoneum was confirmed by an abdominal pracentesis in the left lower quadrant. Progress was satisfactory after splenectomy, but prophylactic penicillin was continued. Early recognition of this rare complication of erythroblastosis is essential to successful management and outcome. (6 refs.)

Department of Paediatrics Ahmadu Bello University Zaria, Nigeria

990 McCRACKEN, J. S. Rhesus sensitization associated with I.U.D. in pregnancy. British Medical Journal, 3(5985):684-685, 1975.

Rhesus sensitization in a 29-year-old RH-negative woman may have been caused by retroplacental damage by an intrauterine device late in pregnancy. The Dalkon shield was extruded prior to membrane rupture in the patient's fourth pregnancy and may have been responsible for sufficient fetomaternal hemorrhage to cause sensitization. Although no autoimmune antibodies had been found in the patient's blood early in pregnancy and at 33 weeks gestation, an immune antibody very much like anti-D was detected in the matenal delivery sample of blood after spontaneous delivery at term. Cord sampling at delivery suggested that the infant's blood group was O Rhesus positive. (5 refs.)

Rise Park Nottingham, England

991 MILNER, R.D.G.; & WOODHEAD, J. S. Parathyroid hormone secretion during exchange transfusion. Archives of Disease in Childhood, 50(4):298-303, 1975.

In 27 exchange transfusions performed for hyperbilirubinemia, infants with hemolytic disease of the newborn responded to donor blood anticoagulated with acid-citrate and dextrose (ACD) by increasing parathyroid hormone (PTH) secretion. There was a greater net loss of PTH during transfusions with ACD blood than with

heparinized blood and a rise in plasma PTH 3 hours after transfusion. The addition of glucagon to ACD donor blood had no effect on PTH secretion. Transfusion with ACD blood caused a net loss of calcium, phosphate, and albumin from the infant, but transfusion with heparin blood did not. Increased secretion of PTH resulting from transfusion with ACD blood is probably due to a fall in ionized calcium concentration caused by the citrate load. (18 refs.)

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992 GLEADHILL, VALARIE; *BRIDGES, J. M.; & HADDEN, D. R. Fanconi's aplastic anaemia with short stature. Absence of response to human growth hormone. Archives of Disease in Childhood, 50(4):318-320, 1975.

A prepubertal boy with Fanconi's familial aplastic anemia and a deficiency in circulating plasma growth hormone failed to respond to a 1 year course of treatment with human growth hormone. Treatment with oxymetholone, however, considerably improved his herratological parameters and resulted in a striking improvement in growth rate. Although the patient had poor and insufficient production of endogenous growth hormone to insulin-induced hypoglycemia, endocrine studies suggest that the major defect in this syndrome is determined more at the end-organ than at the pituitary or gonadal level. (7 refs.)

*Royal Victoria Hospital Belfast, Northern Ireland

993 HATHAWAY, WILLIAM E.; MAHASAN-DANA, CHULARATANA; & MAKOW-SKI, EDGAR L. Cord blood coagulation studies in infants of high-risk pregnant women. American Journal of Obstetrics and Gynecology, 121(1):51-57, 1975.

One hundred and six infants born to mothers with high-risk pregnancies (pre-eclampsia, diabetes mellitus, third-trimester bleeders, severe erythroblastosis fetalis, maternal hypertension, fetal distress, and spontaneous premature labor) had their cord blood analyzed prospectively for coagulability, evidence for disseminated intravascular coagula-

tion (DIC), and hematocrit. Significant changes of hypercoagulability (low antithrombin (AT) III and abnormal thromboelastogram) were seen in the third-trimester bleeder and premature labor groups, which also demonstrated the highest incidence of idiopathic respiratory distress syndrome (IRDS) and necrotizing enterocolitis. Offspring of third-trimester bleeders were anemic; erythroblastosis fetalis infants were also anemic. severely hypercoagulable, and showed coagulation changes consistent with severe liver disease and/or DIC. Infants undergoing stress (pre-eclampsia and fetal distress) had elevated factor V and VIII levels, but they were not hypercoagulable or AT-III deficient. Changes compatible with mild intravascular coagulation were seen in 6 infants. Only 3 of the 22 infants with IRDS had evidence for DIC in their cord blood. (22 refs.)

Department of Pediatrics University of Colorado Medical Center Denver, Colorado 80220

994 HORIGUCHI, TERUSADA; & BAUER, CHARLES. Ethnic differences in neonatal jaundice: comparison of Japanese and Caucasian newborn infants. American Journal of Obstetrics and Gynecology, 121(1):71-74, 1975.

Seventy-five infants of Japanese origin, both parents being Japanese, who were born at Roosevelt Hospital (New York) between January, 1970 and August, 1972, were compared with 50 control infants of Caucasian origin, born there during the same period, for incidence of clinical jaundice. Only uncomplicated term pregnancies were selected. The groups had similar antenatal and intrapartum care, maternal age, parity, intrapartum medication, type of delivery, and anesthesia. The infants with clinical jaundice were subdivided according to their peak serum total bilirubin concentration (group I-less than 10mg/100ml of serum; group II-equal to or more than 10mg, but less than 15mg/100ml of serum; group III-equal to or more than 15mg/100ml of serum). Forty-three study infants (57.3 percent) and 8 control infants (16 percent) had clinical jaundice, a difference statistically significant at P<0.01. Twelve study infants and no control infants were in group III (severe hyperbilirubinemia). The onset of jaundice in most cases was recognized on the third postnatal day. In 1 Japanese infant, jaundice was first noticed on the

seventh postnatal day. Phototherapy was instituted, but after 24 hours of this treatment there was no change in the severe hyperbilirubinemia. An exchange transfusion was performed that might have been avoided if hyperbilirubinemia had been recognized earlier. (18 refs.)

Department of Obstetrics and Gynecology College of Physicians and Surgeons Columbia University 630 West 168th Street New York, New York 10032

995 TAN, K. L. Comparison of the effectiveness of single-direction and doubledirection phototherapy for neonatal jaundice. *Pediatrics*, 56(4):550-553, 1975.

Two matched groups of Chinese infants with "idiopathic" jaundice, all of them with bilirubin levels of 15mg/100ml and above, were subjected to phototherapy, one group to single-direction and the other group to double-direction phototherapy. Infants in both groups were turned over only occasionally. The total energy output on the infants' skin was similar in both groups. The 2 groups were comparable in every respect, with 24-hour falls in bilirubin levels being almost identical, and the number of infants in each group achieving bilirubin levels less than 11mg/100ml at 24, 48, and 72 hours being statistically very similar. These results were obtained despite the fact that, during phototherapy, those infants with single-direction phototherapy presented with bleaching of the skin on one aspect only, while the other group had a more uniformly distributed bleaching. The findings emphasize the amount of energy output in the effective range allowed to act on the skin as the most important factor. Where the energy acting on the skin can be varied in inverse ratio to the skin area exposed, the effect of changing the proportion of skin surface under phototherapy is minimal. However, where the irradiance is uniform, the total radiant flux increases with increase in the skin surface area irradiated. (6 refs.)

Department of Paediatrics University of Singapore Singapore 3 996 KAN, YUET WAI; GOLBUS, MITCHELL S.; TRECARTIN, RICHARD; FURBETTA, MARIO; & CAO, ANTONIO. Prenatal diagnosis of homozygous β-thalassaemia. Lancet, 2(7939):790-792, 1975.

Prenatal diagnosis was attempted in 2 pregnancies at risk for homozygous β^* and β^o thalassemia. Fetal blood sampling was carried out by placental aspiration at weeks 21 and 18 of gestation, respectively. Small samples of blood mixed with amniotic fluid were withdrawn and studied by particle-size analysis. The fetal red cells in the placental-aspirate samples were enriched to over 90 percent after differential agglutination with anti-i serum. Globin-chain synthesis showed no detectable \(\beta\)-globin-chain synthesis in the fetal blood samples of either fetus. The absence of β -globin-chain synthesis was confirmed when the blood from the aborted fetuses was examined. The findings indicate that prenatal diagnosis of homozygous β -thalassemia is possible and that the defect of β-globin-chain synthesis in both homozygous β and β thalassemia is expressed in utero at weeks 18 to 21. (10 refs.)

Department of Medicine University of California San Francisco, California

997 MCCORMACK, MICHAEL K.; SCARR-SALAPATEK, SANDRA; POLESKY, HERBERT; THOMPSON, WILLIAM; KATZ, SOLOMON H.; & BARKER, WILLIAM B. A comparison of the physical and intellectual development of black children with and without sickle-cell trait. Pediatrics, 56(6):1021-1025, 1975.

A double-blind controlled study was conducted to compare physical and intellectual growth measures in 19 children with sickle-cell trait (HbS/A) from a large group of black same-sex twin pairs with the measures taken of a sample of normal (HbA/A) black children from 155 monozygotic and dizygotic same-sex twin pairs. Sickle-cell trait carriers were found to weigh less than normal children, to have smaller upper arm circumference and lesser skinfold thickness, to be smaller, and to have significantly less mature skeletal age. Analysis of psychological measures showed that sickle-cell carriers tended to score lower on 4 of 5 intellectual measures, scoring one-fifth to one-third of a standard deviation lower than normal

children. The overall tendency of the normal children to exceed the trait carriers in intellectual development was generally supported by the results of comparative measurements of the 4 dizygotic twin pairs found to be discordant for sickle-cell trait. (37 refs.)

Division of Human Genetics Rutgers University 32 Bishop Street New Brunswick, New Jersey 08903

998 KOENIG, HAROLD M.; & VEDVICK, THOMAS S. Alpha thalassemia in American-born Filipino infants. *Journal of Pediatrics*, 87(5):756-758, 1975.

The incidence of Bart hemoglobin (Hgb) was studied in cord blood samples from 313 term Filipino newborn infants born over a 12-month period at the Naval Regional Medical Center, San Diego, California. Bart Hgb was detected in the hemolysates of cord blood in 17 (5.4 percent) of

the infants. This incidence can be expected to result in a fetal wastage due to homozygous alpha-thalassemia in about 1 of every 1.600 conceptions. Hemograms were performed on 6 newborn infants with and 141 newborn infants without Bart Hgb in the cord blood; Bart Hgb levels were 5-7 percent of the total Hgb on the 6 infants. Hemograms were repeated on 97 Filipino infants at age 6 months, including 6 infants with Bart Hgb in their cord blood. Red cell morphology at age 6 months revealed marked degrees of microcytosis and target cell formation in the infants with Bart Hgb in their cord blood. Review of hemograms and peripheral smears on family members of 6 infants with suspected alpha-thalassemia trait at the 6-month examination of the infants demonstrated mild anemia, microcytic red blood cells, target cells, normal Hgb A2 and Hgb F levels, normal Hgb electrophoresis, and normal serum iron studies in at least 1 parent of each infant and a total of 8 siblings. (10 refs.)

Department of Pediatrics Naval Regional Medical Center San Diego, California 92134

MEDICAL ASPECTS — Etiologic Groupings Trauma or physical agents

999 TU, LINDA. Parents Anonymous. *Lancet*, 2(7940):878-879, 1975. (Letter)

Parents Anonymous, a self-help organization now comprised of about 55 chapters, offers immediate help for parents who have abused, or feel in danger of abusing, their children. Each chapter has the help of a professional sponsor. Members volunteer to answer telephone calls from the community, and frequent meetings are held to discuss problems. Subsequent referrals to appropriate agencies are often made with the help of Parents Anonymous.

276 Drewry Avenue Willowdale, Ontario Canada M2M 1E5

1000 National Center for Child Abuse and Neglect. Working with abusive parents from a psychiatric point of view. Steele, Brandt F. Washington, D.C., 1975. 28 pp. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price \$0.65. Publication No. (OHD)75-70.

Child abuse or neglect is an abnormal behavior attributable to neglect or abuse experienced by the abusive parent earlier in life. Abusive child-rearing develops according to specific pattern: lack of sufficient love and care, extremely high premature demand for performance, and excessive criticism and physical punishment for failure. Immaturity, dependency, lack of appropriate sympathetic responses, and inability to experience pleasure are common psychological characteristics of abusive parents. Problems involved in therapeutic relationships with abusive parents include parental reluctance to become involved, avoidance of

criticism, lack of adequate and accurate information, and parental distrust of a social caseworker from a different race, culture, or economic background. Possible treatment methods include public and private social agency casework, role modeling, group therapy, psychotherapy, and behavior modification.

1001 NEWBERGER, ELI H.; et al. Toward an etiologic classification of pediatric social illness: a descriptive epidemiology of child abuse and neglect, failure to thrive, accidents and poisonings in children under four years of age. Resources in Education (ERIC), 11(4):130, 1976. 17 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED115364.

A descriptive epidemiology of child abuse and neglect, failure to thrive, accidents and poisonings in children under age 4 is provided. A total of 560 children admitted to the Children's Hospital Medical Center in Boston were surveyed, and children with social diagnoses were matched with control children without such diagnoses on the basis of age, race, and socioeconomic status. Children's housing, marital, financial, health, employment, child care, and familial problems, and specific experiences of the mother and child were determined through interviews with the children's mothers. Accidents were related to high levels of stress due to recent mobility and change in household composition, and failure to thrive and child abuse were related to high levels of stress in the mother and a lack of social support. Families of children with social diagnoses did not have regular health care and had experienced frequent and recent moves, childrearing problems, a broken family in the mother's childhood, and mother-initiated separations from the child.

1002 COHEN, BERNARD; et al. Do hyperactive children have manifestations of hyperactivity in their eye movements? Resources in Education (ERIC), 11(5):98, 1976. 13 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112601.

Eighteen 3-12-year-old hyperactive children were examined to determine whether their hyperactivity was also manifested in their eve movements. Short and long periods of fixation, pursuit movements, and small and large saccadic movements (rapid involuntary jumping of the eyes from one fixed point to another) were observed under a variety of test conditions, including manual problem solving. Optokinetic nystagmus and eve movements observable by electrooculography were also measured under the test conditions. Findings indicate that hyperactive Ss were not able to hold their eyes as steady in direct foward or lateral gaze as control Ss and that they continued to use combined head and eve movements at a later age than controls while problem solving. During pursuit, hyperactive Ss tended to have more saccadic movements to non-target areas.

1003 KINSBOURNE, MARCEL. Hyperactivity. Resources in Education (ERIC), 11(5):98-99, 1976. 14 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112602.

Behavioral characteristics, precipitating factors, and stimulant medication theory are discussed in relation to hyperactivity in children. Hyperactive children most often exhibit an impulsive style in motility, attention, and socialization, which may cause difficulties in feeding, school behavior, and peer acceptance. Emotional stress and chemical food additives may precipitate hyperactivity, which may be treated with stimulant medications. Goals of stimulant medication, types of drugs and their advantages, dosage of medication, indications for discontinuing drug therapy, and effects of stimulants on growth, appetite, and sleep patterns are all discussed.

1004 CATERINI, HERIK; LANGER, ALVIN; SAMA, JAHIR C.; DEVANESAN, MONA; & PELOSI, MARCO. Fetal risk in hyperextension of the fetal head in breech presentation. American Journal of Obstetrics and Gynecology, 123(6):632-635, 1975.

Hyperextension of the fetal head in breech presentation probably occurs in about 5 percent of such presentations, and the danger of this

malpresentation should not be underestimated. Although many possible factors may cause this presentation (including multiparity, placenta previa, uterine malformations, prematurity, multiple pregnancies, fetal anomalies, tumors of the fetal neck, cord around the neck, and uterine leiomyoma), only 3 etiological factors were frequently noted in a literature review. Seven newly reported cases, coupled with existing reports, suggest that all breech presentations be x-rayed early in labor to determine the attitude of the head and to assess pelvic adequacy. Cesarean section is the management of choice in persistent hyperextension. (39 refs.)

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1005 DUKE, R.F.N. Battered babies. British Medical Journal, 2(5964):194, 1975. (Letter)

The committees springing up to investigate parents who may be harming their children may be helpful and even essential, yet they pose important problems of principle that need to be resolved. They are self-appointed committees which work in secret and whose members have no special training for their task. Anybody can be reported to such committees by anyone. The potential for excessive keenness in investigation and for subsequent unethical actions is alarming.

Warwick Hospital Warwick, England

1006 Fetal damage from breech birth. British Medical Journal, 2(5964):158-159, 1975. (Editorial)

On the basis of present evidence of substantial incidence of clinically recognizable brain damage among survivors of breech delivery, any case for altering the obstetric management of breech birth must rest more upon the reduction of perinatal deaths than upon any hope of reducing brain damage among survivors. The perinatal mortality for breech delivery remains approximately 4 times that for vertex presentation. To lower the incidence of premature labor, it would be

reasonable, as in the case of a twin pregnancy, to admit the mother to the antenatal ward for complete rest about 6 weeks before term. All cases of breech birth should be under the personal care of an experienced and skilled obstetrician. A risk index scoring system and repeated monitoring of fetal blood pH during labor may indicate when delivery by cesarean section would be safer for the child. (18 refs.)

1007 OLIVER, J. E. Statistics of child abuse. British Medical Journal, 3(5975):99, 1975. (Letter)

Peckham and lobling's estimate that the number of fatalities from nonaccidental injury in children under 5 years of age was between 80 and 776 in England and Wales in 1972 does not take into account all of the possible causes of nonaccidental death. Some diseases given as the cause of death may not be as innocent as the designation implies. Examples which actually occurred in families with actively ill-treated and neglected children include deaths from inhalation of gastric contents which may have been a precipitant or consequence of abuse, repeated exposure, suffocation, and deaths resulting from spasticity or mental handicap originating from a battering episode. Although another analysis of statistics from a population of 200,000 indicated a range within one standard error of 31 to 526, it is a mistake to consider 776 as an upper limit, in view of the range of nonaccident categories of death which may have resulted from abuse or neglect. (2 refs.)

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1008 FRANKLIN, ALFRED WHITE. Statistics of child abuse. British Medical Journal, 3(5975):98-99, 1975. (Letter)

Since the problem of child abuse cannot be blamed on any one person or profession, studies attempting to pinpoint the guilty party or parties should be discontinued in favor of attempts to find a balance between helping to preserve the integrity of the family and defending the individual child. The number of families in which children suffer from abuse could be found only through statutory notification, which would require strict recordkeeping by all those required

to notify the authorities of such cases, and which would never identify all cases of child abuse. Instead, society should accept the fact that such a problem does exist and should attempt to understand why.

London W.1, England

1009 Georgia University. Child Abuse: some findings from the analysis of 1172 reported cases. Johnson, Clara L. Athens, Georgia: Regional Institute of Social Welfare Research, 1975. 12 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76, plus postage. Order No. ED110174.

Major demographic variables associated with differential case handling in 1,172 confirmed and unconfirmed child abuse cases were identified by analyzing data transferred from state central registries on child injury cases to a standardized form. Male white children under the age of 6 were involved in the majority of cases, although the black male child under 3 tended to suffer the more serious injuries. Most children were abused by parents of the same sex, and in their own homes. In terms of differential case handling, female perpetrators tended to inflict more serious injuries but were less frequently confirmed as abusers, and a disproportionately larger percentage of cases were confirmed involving abuse of white children under the age of 1 year, as compared to black children in the same age range. Data suggest greater leniency in handling female perpetrators and different criteria in handling cases for different racial groups.

1010 DALTON, K. Paramenstrual baby battering. British Medical Journal, 2(5965):279, 1975. (Letter)

Many mothers who have battered their babies do not fit the stereotypes of being lacking in love and concern for their offspring. Instead they are women with a strong maternal urge who in a sudden fit of premenstrual irritability lose control and injure their children. It is important to recognize this group because diagnosis is simple, and the condition responds satisfactorily to progesterone therapy. Social workers should not hesitate to ask the mother at the first interview

when her next menstrual period is expected; the possibility of premenstrual tension should always be borne in mind and progesterone treatment supplied when appropriate. (1 ref.)

1011 OLIVER, J. E. Microcephaly following baby battering and shaking. *British Medical* Journal, 2(5965):262-264, 1975.

Three cases are described among residents of facilities for the MR in northwest Wiltshire, England, in which an infant's brain had been damaged by shaking, swinging, hitting, or throwing, leading to MR as the rate of growth of head circumference suddenly decelerated or almost ceased. All 3 infants were described as healthy at birth, but several years after battering their head circumferences were grossly disproportionate to age (43cm at age 7, 46cm at age 5½, and 45cm at age 4½). A tendency for professionals to attenuate information in such cases increases the risks to siblings in abusive families and leads to underestimating child abuse as a factor in causing certain types of microcephaly. Child abuse may be contributing a notable proportion of such cases to the hospital population of MR. (8 refs.)

Burderop Hospital Wroughton, Swindon England

1012 RISCALLA, LOUISE MEAD. The professional's role and perspectives on child abuse. Resources in Education (ERIC), 11(6):143, 1976. 13 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED118274.

The ways in which professionals inadvertently or deliberately abuse children and perpetuate child abuse are discussed. Harassment and rejection of children by school personnel, leading to truancy or dropping out, are cited as examples of abuse. Other examples include: treatment of psychological disturbances which do not require outside help; the pressures from teachers, parents, and psychologists obsessed by grades, IQ scores, and achievement tests; continued use of various forms of punishment; the harmful effects of extreme forms

of children's rights legislation; and court ordered removal of abused children from their homes without considering the child's feelings or the adequacy of the foster homes in which they are placed. The moral and legal rights of children to be considered persons are also argued.

1013 HOLMAN, R. R.; & KANWAR, S. Early life of the "battered child." Archives of Disease in Childhood, 50(1):78-80, 1975.

Analysis of the obstetric histories and early lives of 28 abused children suggests that abusing parents are unable to adequately meet environmental pressures. Common features of histories were reduced prenatal care, separation of mother and child during the neonatal period, illness, poor environment, and parental problems. In 10 cases parents admitted resenting the pregnancy, and 2 had requested a termination. Many of the parents perceived the abused child as being particularly difficult or "different" from other children. Ten mothers had been treated for mental disorders. and at least 4 fathers had had histories of psychiatric illness. Early recognition of people at risk for abusing children would allow specific supportive therapy to be applied to these families. Measures might include involvement of social services and health visitors, improved housing conditions, day nursery placement for the child, and possibly psychiatric help. (7 refs.)

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1014 Hyperactivity in children. British Medical Journal, 4(5989):123-124, 1975. (Editorial)

Attitudes towards overactive behavior in children differ appreciably on the 2 sides of the Atlantic. Hyperkinesis has been regarded increasingly as synonymous with brain damage or minimal brain dysfunction, whether unequivocal neurological signs are present or not, and there has been an enthusiastic use, especially in the United States, of the diagnosis of the hyperkinetic syndrome or minimal brain damage and of stimulant drugs. Although the hyperkinetic syndrome is a recognized entity in Great Britain, it is diagnosed much more rarely, and fewer children are labeled hyperkinetic and given amphetamines. Recent

research has cast doubt on the overeasy assumption that brain damage leads to abnormal behavior (and vice versa). Even unequivocal brain damage at birth need not result in subsequent behavioral and intellectual abnormality if parent-infant relationships are optimal, and environmental factors around the time of birth can be as potent a cause of failure in mother-infant relations and later disturbed behavior as biological factors. The practitioner presented with a family complaining of a child's hyperactivity must determine for himself any unusual degree of activity and, if it exists, provide or recommend the proper management. (38 refs.)

1015 DORMAN, SANDY. Child abuse: a review of 69 cases. Clinical Proceedings, Children's Hospital National Medical Genter, 31(11):256-262, 1975.

Sixty-nine randomly selected cases of child abuse were studied. Three children were seen twice, and 1 child, 3 times, making a total of 74 separate incidents. The most common injuries (44 percent) were bruises and contusions. Several cases showed multiple injuries. A majority of the children were less than 3 years old (56.7 percent); 34.8 percent were under 1 year of age. Although drug addiction, mental illness, and previous history of assault were seen in some family backgrounds, nothing unusual was noted about parental background in the majority of cases (55). The mother was the primary suspect in less than 35 percent of the studied cases, while nearly 50 percent of the primary suspects included grandparents, siblings, babysitters, aunts, uncles, and stepparents. Propensity towards child abuse may be related to personal tolerance levels. As illustrated by a case report of a 6-week-old infant who presented with diarrhea, presenting problems are not always explicit enough to indicate a definitive diagnosis of child abuse. If the physician had not been alert to this child's painful cry and had not been sensitive to the parents' concern or hidden fear, he might have sent the infant home with a change of diet. In order to diagnose child abuse, physicians and nurses must have a high index of suspicion. (6 refs.)

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1016 CONNERS, C. KEITH; et al. Food Additives and Hyperkinesis: a Controlled Double-blind Experiment. (Includes NIE staff critique). Pittsburgh, Pa.: Pittsburgh University, Dept. of Psychiatry, 1975. 59 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price, MF \$0.83; HC \$3.50 plus postage. Order No. ED117877.

The theory that hyperkinesis may be caused by artificial flavors and colors in food was tested with 15 hyperkinetic children 6-12 years old. Ss were randomly assigned to an experimental (K-P) diet which eliminated artificial flavors, colors, and natural salicylates or a control diet for 4 weeks, and the following month they used the alternative diet. Prior to treatment, parents and teachers completed biweekly questionnaires regarding each S's behavior both on medication and when medication was discontinued, and following each diet condition, both groups were consulted and a judgment was made using the Clinical Global Impressions scale without knowledge of the diet condition. Results indicated that: control diet ratings did not differ from the baseline period for either parents or teachers: both parents and teachers reported fewer hyperkinetic symptoms on the K-P diet as compared to pretreatment baseline; and teachers reported a significant reduction of symptoms on the K-P diet as compared to the control diet, but parents did not. Included with the study is a National Institute of Education critique which concluded that the results were indecisive and that the experimental design was

1017 BRANS, YVES W.; & CASSADY, GEORGE. Neonatal spinal cord injuries. American Journal of Obstetrics and Gynecology, 123(8):918-919, 1975.

Although delivery by cesarean section has reduced the incidence of neonatal spinal injury resulting from hyperextension of the head in footling breech position, some spinal lesions may occur before labor begins. Postmortem examination of an infant born spontaneously in the footling breech position after an uneventful pregnancy revealed hemorrhagic necrosis, complete transection of the spinal cord, and recent subdural hemorrhage. The fact that the baby (who died on

the sixth postnatal day) had reflex activity at birth suggested that the lesion was not recent and that she had recovered from the initial trauma. (3 refs.)

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1018 SLEATOR, ESTHER K. Methylphenidate reaction. *Pediatrics*, 55(6):895-896, 1975. (Letter)

A 9.5-year-old boy (height 137.5cm, weight 38kg) with minimal brain dysfunction manifested a striking idiosyncratic reaction to methylphenidate, administered during a study of its effects on cognition. The boy received 40mg of methylphenidate (1mg/kg) at 1:30 P.M. He performed well on the testing procedures but began to show constant movements of the tongue as they progressed. By 3:00 he was pale, complained of dizziness, had markedly slurred speech, was unable to focus his eyes, and was so ataxic he could not walk without support. Vital signs were all normal. He was given 30mg of phenobarbital. The child was in considerable distress, frightened, and experiencing true vertigo. With no further sedation administered, the vertigo and subjective distress disappeared abruptly at about 6:30, and the movements persisted but diminished gradually and disappeared by 11:00 P.M. No sequelae have been noted.

Children's Research Center University of Illinois Urbana, Illinois

1019 WEITHORN, CORINNE; & ROSS, ROS-LYN. Who monitors medication? Journal of Learning Disabilities, 8(7):458-461, 1975.

Although it is important to monitor the hyperactive child on stimulant medication carefully, a survey of 46 teachers suggested that inadequate monitoring often results from inadequate communication between teachers and prescribing physicians. Data on 71 children known to be on medication for hyperactivity showed that direct contact between the teacher and the physician (or a member of his staff) took place in only 18 percent of the cases. There was contact through an intermediary (counselor, school nurse,

or parent) in 39 percent of the cases and no communication between the school and the physician in 27 percent of the cases. Fifteen percent of the teachers did not know whether the physician was receiving reports from the school or parents. Twenty-one percent of the teachers felt that they were adequately informed about the nature of the medication and of anticipated behavioral changes. If drugs are not being monitored, there is a possibility of their misuse no matter what their therapeutic potential is. (5 refs.)

Department of Education Queens College City College of New York New York, New York

1020 WEBER, BRUCE A.; & SULZBACHER, STEPHEN I. Use of CNS stimulant medication in averaged electroencephalic audiometry with children with MBD. Journal of Learning Disabilities, 8(5):300-303, 1975.

An investigation was undertaken to determine whether central nervous system (CNS) stimulant drugs (dextroamphetamine and methylphenidate) affect averaged electroencephalic audiometry (AEA) in children with minimal brain dysfunction. Twelve MBD children were tested on 3 separate days to permit comparisons of responsiveness to no-drug, placebo, and CNS drug conditions. Nine of the children were tested a fourth time to compare 2 dosage levels. When the children were tested on medication, lower thresholds were recorded. AEA performance of children on whom medication had a favorable behavioral effect was different from that of poor drug responders even in drug and no-drug conditions. Further reductions in average electroencephalic response (AER) thresholds were seen with an increased drug dosage. The drugs did not differ significantly in their effects on behavior or on AER thresholds and may have a direct effect on the CNS mechanisms underlying the AER. (5 refs.)

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1021 WALKER, SYDNEY, III. Drugging the American child: we're too cavalier about hyperactivity. *Journal of Learning Disabili*ties, 8(6):354-358, 1975.

Although administering stimulant drugs to hyperactive children is expedient, drugs merely mask the symptoms without curing the underlying disorder. Comprehensive diagnostic tests and the thorough evaluation of quantitative data almost always can result in the identification of the hyperactive child's problem and suggest appropriate treatment. Causes of hyperactivity which may be revealed on close examination and analysis of medical histories include vein engorgement; low level of glucose; ingestion of inedible substances (pica); glandular problems; lead or carbon monoxide poisoning; and brain lesions. Psychiatric or situational causes of hyperactivity include mixed dominance, traumatic experiences, and unresolved conflicts. Certain artificial food substances and pinworms may also be responsible for some manifestations of hyperactivity. Diagnosis and correction of underlying physical or psychiatric problems can benefit hyperactive children without exposing them to the possible risks of drug therapy.

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BRAUD, LENDELL; LUPIN, MIMI; & BRAUD, WILLIAM. The use of electromyographic biofeedback in the control of hyperactivity. Journal of Learning Disabilities, 8(7):420-425, 1975.

The use of electromyographic biofeedback helped a 61/2-year-old hyperactive boy to reduce his muscular activity and tension. Through 11 sessions of instruction, the child was taught to turn off a tone which signaled the presence of tension. Both muscular tension and activity decreased within and across sessions, with the child's continued ability to control hyperactivity exhibited at 7-month follow-up. As long as the child continued to practice and use the technique learned in the laboratory, at school, and at home, behavior improved in both settings. Improvements on 5 subtests of the Illinois Test of Psycholinguistic Abilities (a range of 25 to 56 months) and a group-administered achievement test at school indicated that pretest scores were depressed by hyperactivity and poor attention. Self-confidence and self-concept also improved dramatically over training sessions. Either biofeedback or relaxation tapes can be used to teach a hyperactive child

self-control, and reinforcement can be used to reward continuation of practice until the new behavior is generalized. (11 refs.)

Psychology Department Texas Southern University Houston, Texas 77004

1023 TIWARY, C. M.; ROSENBLOOM, A. L.; ROBERTSON, M. F.; & PARKER, J. C. Effects of thyrotropin-releasing hormone in minimal brain dysfunction. *Pediatrics*, 56(1):119-121, 1975.

Two 6.5-year-old unrelated Ss, a boy and a girl, with normal intelligence and minimal brain dysfunction (hyperkinetic impulse disorder) participated in a double-blind cross-over study of the effect of thyrotropin-releasing hormone (TRH) on behavior. The children were admitted to the study 6 days after their last dose of methylphenidate. After a baseline observation day, placebo or 200 µg of TRH in 2ml of 0.9 percent saline was administered, and observations continued that day and the next. The reciprocal injection was given 1 week later, and observations were repeated on the injection day and the following day. Profound behavioral changes were apparent 3 to 4 hours after TRH injection. Movements were more graceful, and involvement with tasks and play was more purposeful. All 11 observers involved with each youngster were able to identify correctly the TRH injection day. Auditory projection test drawings that were monotonous or immature and fragmented, with no central theme or correlation with the verbal description, during baseline and placebo treatment periods were integrated, thematic, and consistent with verbal descriptions on the day of TRH injection and the next day. Finger painting improved analogously, and improvement persisted, even though motor activity reverted to that of the untreated state on the day after TRH injection. The findings suggest a nonspecific effect of TRH independent of etiology and different from the mode of action of the stimulant drugs. (9

Department of Pediatrics, University of Nebraska Medical Center 42nd and Dewey Avenue Omaha, Nebraska 68105 1024 SCHAIN, RICHARD J.; & REYNARD, CAROL L. Observations on effects of a central stimulant drug (methylphenidate) in children with hyperactive behavior. Pediatrics, 55(5):709-716, 1975.

Ninety-eight hyperactive children (CA 6 to 12 years) were treated with methylphenidate (initial dose of 10mg, maximum dosage of 60mg) or placebo under double-blind conditions. Of the 48 children on placebo, only 1 (2 percent) was carried through the entire study and judged to be a success by the parents (but not by the classroom teacher.) Most children initially receiving placebo were switched to active drug during the first weeks of the study, owing to evident lack of response. Seventy-nine percent of the 94 children receiving methylphenidate were judged to be drug successes at the end of the 16-week trial period, the most dramatic successes being seen in children who might be characterized as exhibiting hyperactivity in the absence of other evidence of neurological or emotional disturbances ("developmental hyperactivity"). A wide range of doses was required, with final daily dosages beginning at 5mg (0.2mg/kg) and going as high as 60mg (1.9mg/kg) (one exception received 2.9mg/kg, reduced subsequently to 2.0mg/kg). Drug treatment was considered a failure when lethargic, withdrawn, and apathetic behavior appeared (6 cases) or when there was no evidence of drug effectiveness after 16 weeks' administration. Stimulant drugs must be carefully titrated for optimum clinical results. (28 refs.)

Department of Pediatrics UCLA School of Medicine Los Angeles, California 90024

1025 STOVER, WILLIAM H., JR. Assumptions on battering questioned. *Pediatrics*, 55(5):748, 1975. (Letter)

Certain statements made in a recent review of the battered child syndrome by Lauer et al. appear to rest on unstated and unlikely assumptions. The conclusion concerning the decreased abuse of minority children as compared to white children is valid only dependent upon an unproved assumption that the rates of hospitalization of whites and nonwhites for all causes except battering are equal. In fact, it seems likely that the lower socioeconomic status of minority children would be associated with an increased rate of illness

requiring hospitalization as compared to whites. The assertion that nonwhite families were less inclined than their white counterparts to be involved in child battering rests on the same unproved assumption and also on the assumption that the size of white and minority group families is equal. Although the use of census data to establish disease incidence has its limitations, the matched-control methodology used in the study has potential for misinterpretation, too. (3 refs.)

U.S. Public Health Service Indian Hospital Crow Agency, Montana 59022

1026 LAUER, BRIAN; BROECK, ELSA TEN; & GROSSMAN, MOSES. Reply to criticism of assumptions on battering. Pediatrics, 55(5):748, 1975. (Letter)

In our recent review of battered children, children hospitalized for other causes were used as controls. This matched-control methodology was adopted so that the abused and control children would both be drawn from the same racially mixed, indigent part of the population and would share important socioeconomic features. All potential bias was not eliminated. However, the use of the matched-control methodology may have prevented many of the problems resulting from the selection of a comparison group based upon census data for the city, county, or state. Sociodemographic characteristics of the patient population and the general population inevitably would have been misleading.

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1027 COUNCIL ON CHILD HEALTH. Medication for hyperkinetic children. *Pediatrics*, 55(4):560-562, 1975.

Stimulant drugs have a place in the treatment of hyperkinetic children and, in properly selected individuals, do not constitute constraint of freedom. Like drug therapy in other treatable maladies, the ultimate selection of patients remains the responsibility of the prescribing physician. Hyperkinesis is rarely an isolated symptom, and drug selection is, hopefully, based on such factors as history and physical examinations with appropriate emphases and weighing of risks. Of the agents available, dextroamphetamine and methylphenidate are apparently the most effective and probably the best documented stimulants. Selection of the agent and the proper dosage must be tailored to the needs of each child individually. Even though most children are likely to require long-term treatment, many clinicians discontinue the use of medication over each long school vacation, and little evidence of pharmacologic habituation has been found. The fact that stimulant drugs are a valuable resource for properly selected children in critical need should not eliminate consideration of nondrug therapy in appropriate situations. (2 refs.; 11-item bibliog.)

MEDICAL ASPECTS — Etiologic Groupings Postnatal growths and gross brain disease

1028 SCHAFER, JOHN A.; *BERG, BRUCE O.; & NORMAN, DAVID. Cerebellar calcification in tuberous sclerosis. Archives of Neurology, 32(9):642-643, 1975.

A 5-year-old girl was observed with tuberous sclerosis, in whom an unusual pattern of intracranial calcification was shown on plane skull roentgenograms in the absence of cerebellar dysfunction. The computerized tomographic (CT) brain scan was useful in detecting additional

intracranial calcifications that were not apparent on standard roentgenographic studies. Extensive cerebellar calcification like that found in this patient has rarely been described. The CT brain scan revealed a posterior fossa lesion extending several centimeters into the fossa and two additional small nodules of very high density located adjacent to the anterolateral wall of each lateral ventricle. These were not evident on the plane skull roentgenogram. The CT technique should prove useful in series studies of patients

with tuberous sclerosis in assessing the progression and natural history of these calcific lesions. (6 refs.)

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1029 MALONE, MICHAEL J.; SZOKE, MARIA C.; & LOONEY, GERALD L. Globoid leukodystrophy: 1. Clinical and enzymatic studies. Archives of Neurology, 32(9):606-612, 1975.

A clinical and pathological study was carried out on 4 patients with globoid leukodystrophy (GLD) over a 6-year period, including studies on the biochemical genetics in each of the 3 families involved. Phenotypes differed from the classic picture of Krabbe disease, and a broader spectrum of clinical presentations was suggested. Advanced development was achieved before symptom onset, suggesting normal early maturation of myelination. White blood cells of patients, siblings, parents, and normal age-matched controls were subjected to enzyme studies, utilizing galactosyl ceramide of brain origin and a new assay technique. In leukocyte preparations from patients with GLD, a specific deficit in cerebrosidase activity was found. Intermediate levels of activity were observed in their parents, which indicates heterozygosity and is consistent with an autosomal recessive mode of transmission. (48 refs.)

Neurological Unit Boston City Hospital 180 Harrison Avenue Boston, Massachusetts 02118

MALONE, MICHAEL J.; SZOKE, MARIA; & DAVIS, DONALD A. Globoid leukodystrophy: II. Ultrastructure and chemical pathology. Archives of Neurology, 32(9):613-617, 1975.

Histopathologic studies of post-mortem material from 3 patients with globoid leukodystrophy (GLD) were correlated with physiological and biochemical studies on the patients and their families during life. In addition, the chemical-pathologic findings concerning material from the CNS were defined and found to suggest a

pathogenic mechanism influencing the myelin breakdown observed in GLD. Myelin isolated from maximally involved central white matter was compared with myelin from noninvolved U fiber areas. Myelin from normal, age-matched control brains was also analyzed. Relatively greater amounts of a lighter myelin fraction were found in myelin from U fiber areas, which differed in protein and lipid composition from the heavier myelin fraction. Findings indicate that the metabolic error in GLD may result in the formation of an unstable compact or heavier myelin which is subsequently selectively affected by a process of disintegration. (23 refs.)

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1031 SCHAUMBURG, HERBERT H.; POWERS, JAMES M.; RAINE, CEDRIC S.; SUZUKI, KINUKO; & RICHARDSON, EDWARD P., JR. Adrenoleukodystrophy: a clinical and pathological study of 17 cases. Archives of Neurology, 32(9):577-591, 1975.

Evidence is presented that adrenoleukodystrophy (ALD) is a lipid storage disease, resulting in a striking variety of clinical and pathological findings in the adrenal gland, brain, peripheral nerve, and testes. The diagnosis of ALD was made in 17 male patients, based on clinical and laboratory signs of primary adrenal failure and neurological signs indicative of the degeneration of white matter. Clinical stigmata of adrenal failure were usually dominated by neurological findings. The most reliable diagnostic test was adrenal biopsy; brain biopsy often proved to be misleading. Although the histological picture of the brain lesion differed from that of the adrenal, similar ultrastructural cytoplasmic inclusions were observed which suggested a common metabolic disorder. The intense inflammatory response seems to be a secondary feature of the degeneration of white matter; it occurs within the demyelinated areas, behind the area of active myelin breakdown. (43 refs.)

Department of Neurology Albert Einstein College of Medicine 1300 Morris Park Avenue Bronx, New York 10461 1032 ROBERTS, KENNETH B.; & FREEMAN, JOHN M. Cerebellar ataxia and "occult neuroblastoma" without opsoclonus. *Pediatrics*, 56(3):464-465, 1975.

Opsoclonus is not always present in occult neuroblastoma. Ataxia and other cerebellar signs in the absence of opsoclonus were associated with occult neuroblastoma in a 3-year-old boy. The urine spot test for vanillylmandelic acid (VMA) was normal, but diagnosis was made from a chest x-ray. A high yield of diagnoses resulted from careful examination of roentgenograms of the chest and abdomen in previous cases. Since VMA determination is not a reliable indicator of occult neuroblastoma, a combination of chest and abdomen x-rays is recommended when unexplained or atypical cerebellar signs are present in a young child. (5 refs.)

Department of Pediatrics Johns Hopkins Hospital 601 North Broadway Baltimore, Maryland 21205

1033 BONAITI-PELLIE, C.; BRIARD-GUIL-LEMOT, M. L.; FEINGOLD, J.; & FREZAL, J. Associated congenital malformations in retinoblastoma. Clinical Genetics, 7(1):37-39, 1975.

The 'frequency of associated malformations was studied among 598 cases of retinoblastoma. There were 2 boys with congenital heart disease, 1 with multiple malformations (microcephaly, anomalies of the ears, fingers, and urogenital tract), and 4 children with cleft palate. The frequencies of congenital heart disease and multiple malformations were quite similar in this sample and the general population, but the incidence of cleft palate was significantly higher in the sample (p<0.001). Three of the 4 cases with cleft palate-1 bilateral retinoblastoma case and 2 familial cases-were probably due to germinal mutations. The unilateral sporadic case might also have been due to germinal mutation, but there were no offspring to provide confirmation. (6 refs.)

Unite de Recherches de Genetique Medicale Hospital des Enfants-Malades 149 Rue de Sevres F 75730 Paris Cedex 15, France 1034 WARNER, J. O. Juvenile onset metachromatic leucodystrophy. Failure of response on a low vitamin A diet. Archives of Disease in Childhood, 50(9):735-737, 1975.

A 9-year-old girl who was treated with a low vitamin A diet after diagnosis of juvenile onset metachromatic leukodystrophy (MLD) showed a progressive and apparently rapid deterioration in condition. The diet was stopped after 5 months, but a slow but continued decline in her neurological state has continued for 18 months. Treatment may have failed because the myelin already formed was abnormal, but the poor prognosis of this hereditary disorder and the absence of other treatment indicate that any therapy which may be effective should be tried. Interesting features of the case include: presentation as a behavioral problem with difficulties at school, failure to develop signs of peripheral neuropathy, and low arylsulfatase A levels in the white blood cells of both parents. Genetic counseling and antenatal diagnosis are the only satisfactory clinical approaches to MLD. (7 refs.)

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1035 BOND, JANE V. Clinical significance of catecholamine excretion levels in diagnosis and treatment of neuroblastoma. *Archives of Disease in Childhood*, 50(9):691-695, 1975.

The clinical value of vanillylmandelic acid (VMA) estimation in the early diagnosis of neuroblastoma and in monitoring response to treatment and determining a prognosis was assessed in 50 children. In 28 of 36 children who died, VMA was raised at diagnosis and remained high throughout the course of the disease. In 3 out of 5 children with residual tumor, VMA remained increased. In 8 out of 10 disease-free survivors, the urinary VMA level was raised at diagnosis but returned to normal rapidly after treatment. Patients who survived for 3 years or more also exhibited other good prognostic features, including young age at diagnosis, primary tumor in the thorax, and histologically well differentiated tumors which had not metastasized. Early estimation of VMA can confirm the diagnosis of neuroblastoma in patients with clinically confusing pictures without subjecting them to a battery of complex and unnecessary investigations. (18 refs.)

Institute of Child Health Guilford Street London WC1, England

1036 Stereotaxic neurosurgery for cerebral palsy. British Medical Journal, 3(5985):665, 1975.

Results of stereotaxic surgery performed on 10 children with cerebral palsy are reported. Transient complications encountered in 5 patients did not affect the final outcome. Four patients improved after thalamotomy on the contralateral thalamus, while one deteriorated; 5 improved after dentatotomy on the ipsilateral dentate nucleus, with one remaining unchanged. Stereotaxic surgery may help in the overall management of spasticity and cerebral palsy, but physiotherapy and orthopedic surgical aftercare must be maintained. Its use in children will probably be limited by the need to use general anesthesia and the difficulty in accurate localization. (5 refs.)

1037 MUNSON, F. ANN. Sequelae of delayed spontaneous respiration in breech infants. British Medical Journal, 3(5979):371-372, 1975. (Letter)

Possible long-term sequelae were examined in a follow-up study of 106 vaginal breech deliveries who did not die from tentorial tear and who were treated with prompt intubation and prolonged positive pressure respiration (PPR), Of 3 infants who failed to breathe spontaneously within 29 minutes, 1 is grossly handicapped at 3 years, being spastic and slightly MR. He was born at 40 weeks gestation after accidental hemorrhage and treated with PPR for 30 minutes. Findings of cerebral palsy in 4 infants who failed to breathe spontaneously within 20 minutes after toxic accidental hemorrhage regardless of mode of delivery suggest that one should desist from PPR after 20 minutes in any infant after concealed accidental hemorrhage. It is unlikely that mode of delivery influenced the development of spasticity in the present case. (2 refs.)

1038 ROPERS, HANS-HILGER; BURMEIS-TER, PETER; VON PETRYKOWSKI, WOLFGANG; & SCHINDERA, FRANK. Leukodystrophy, skin hyperpigmentation, and adrenal atrophy: Siemerling-Creutzfeldt disease. Transmission through several generations in two families. American Journal of Human Genetics, 27(4):547-553, 1975.

Conclusions are drawn from genealogical and clinical data on 2 apparently unrelated families with at least 15 members affected with Siemerling-Creutzfeldt disease (most frequently called Addison-Schilder disease). On the basis of these cases the syndrome, consisting of leukodystrophy, hyperpigmentation of the skin, and adrenal atrophy, is inherited as an X-linked or autosomal dominant trait with male sex limitation. Carriers do not show adrenal failure and apparently have no neurological involvement, but they may be hyperpigmented in youth. Survival into the fifth decade is possible. The observed extreme interindividual differences in the manifestation of clinical symptoms are not the result of different mutations at the Siemerling-Creutzfeldt disease locus, but are due to differences of the environment and/or the genetic milieu. It was not possible to identify heterozygotes by endocrinologic investigations. (10 refs.)

Institute of Human Genetics University of Freiburg 78 Frieburg, West Germany

1039 PAMPIGLIONE, G.; & PUGH, E. Infantile spasms and subsequent appearance of tuberous sclerosis syndrome. *Lancet*, 2(7943):1046, 1975. (Letter)

To determine the proportion of patients with infantile spasm ("the salaam convulsion") who subsequently develop the tuberous sclerosis syndrome (TSS), data on 93 children referred for possible or probable infantile spasms in 1972 and 1973 were studied for confirmation of seizures, MR, skin lesions, phakoma, intracerebral calcifications, or other evidence of TSS. The presence of at least 3 of these major clinical features in any child at follow-up was considered as diagnostic of TSS. The 54 cases not excluded from the study because of an unsubstantiated history of infantile spasms or no mention of skin examination all had definite evidence of infantile spasms. Among this group, 85

percent had mental defect, 40 percent had definite skin changes, and nearly 6 percent had intracranial calcifications on x-ray; 26 percent had 3 or more features diagnostic of TSS, and another 18 percent had less obvious but similar features. The development thus far of features diagnostic of TSS in more than 25 percent of babies presenting with infantile spasms as an early clinical manifestation 2 to 4 years ago seems probable. (3 refs.)

Department of Neurophysiology Hospital for Sick Children Great Ormond Street London WC1N 3JH, England

1040 PEGELOW, CHARLES H.; EBBIN, ALLAN J.; POWARS, DARLEEN; & TOWNER, JOSEPH W. Familial neuroblastoma. Journal of Pediatrics, 87(5):763-765, 1975.

Neuroblastoma occurred in a child of parents who had each had a child with neuroblastoma by a previous marriage. Routine and trypsin Giemsabanded karyotypes demonstrated 2 atypical chromosomes segregating in the pedigree of the patient, a Caucasian female infant born at term and weighing 2,560gm at birth. A number 21p-qchromosome was found in the proposita, her mother, and the maternal grandfather. Examination of this chromosome in prophases that had long chromosomes did not reveal a ring configuration. This atypical number 21 chromosome had a slightly narrower band 21q21; however, the missing piece was not detectable elsewhere in the karyotypes. An atypical number 11 chromosome was found in the proposita and her father, band 11q21 being wide, and band 11q23, narrow. This report appears to be the first instance of familial neuroblastoma in which trypsin Giemsa banding was used in chromosomal analysis. (15 refs.)

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1041 MANGHANI, KISHU K.; LUNZER, MICHAEL R.; BILLING, BARBARA H.; & SHERLOCK, SHEILA. Urinary and serum octopamine in patients with portalsystemic encephalopathy. *Lancet*, 2(7942):943-946, 1975.

To determine the usefulness of the measurement of octopamine as a marker of hepatic encephalopathy, urinary excretion and serum concentrations of octopamine were studied in 17 controls, 33 patients with portal-systemic encephalopathy, and 13 patients with liver disease without encephalopathy. Patients with hepatic encephalopathy had higher urinary and serum octopamine concentrations than control Ss and patients without encephalopathy. Differences between controls and patients without encephalopathy were not statistically significant. Mean urinary octopamine excretion was significantly greater (p<0.005) in patients with than without encephalopathy (148.4±16.7 $\mu g/24h$ as compared with $66.2\pm10.3\mu g/24h$). The difference between mean serum-octopamine concentrations for these 2 groups (16.4±2.7ng/ml as compared with 5.1±0.6ng/ml) was also statistically significant (p<0.05). The findings suggest that the measurement of octopamine, particularly in the serum of patients with liver disease, may be used as another marker of hepatic encephalopathy. The involvement of octopamine in the pathogenesis of portal-systemic encephalopathy has yet to be established. (23 refs.)

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1042 MACKAY, BRUCE; MASSE, SERGE R.; KING, OSCAR Y.; & BUTLER, JAMES J. Diagnosis of neuroblastoma by electron microscopy of bone marrow aspirates. Pediatrics, 56(6):1045-1049, 1975.

The distinctive ultrastructure of neuroblastoma cells was distinguished by electron microscopy of bone marrow aspirates in an 8-year-old black boy investigated for loss of weight and left proptosis, a 4-year-old white girl investigated for abdominal pain and enlargement and diagnosed previously with acute lymphocytic leukemia, and a 3-year-old white boy referred with an 8-week history of swelling of the right temporal region and right proptosis, for whom a biopsy had been considered consistent with embryonal rhabdomyosarcoma. Electron microscopy easily distinguished neuroblastoma cells from cells of other tumors with

which neuroblastoma is often confused by light microscopy, and diagnoses were established quickly. In the third case, the primary tumor was small and could not be demonstrated radiologically. (14 refs.)

Department of Pathology M. C. Anderson Hospital Texas Medical Center Houston, Texas 77025

1043 JOHNSONBAUGH, ROGER E.; & CAHILL, RICHARD. Screening procedures for neuroblastoma: false-negative results. *Pediatrics*, 56(2):267-270, 1975.

The dipstick method of testing for high levels of 3-methoxy-4-hydroxymandelic acid (VMA) was found to be of questionable value as a screening test for neuroblastoma in a 7-month-old boy. Retrospective examination of VMA excretion data

from 30 other patients with histologically proved neuroblastoma or ganglioneuroblastoma further indicated that the LaBrosse spot test and the dipstick method may be too insensitive to rely on as the sole means of chemical evaluation of children with VMA-secreting tumors. The sensitivity of the 2 procedures depends upon the concentration of VMA in the urine rather than upon total amount of VMA excreted. Even though the total amount of VMA excreted in a 24-hour period may definitely be elevated, the concentration of VMA in the 24-hour urine samples may vary greatly from day to day and from patient to patient. A total of 11 of 31 patients (35 percent) might not have been detected even though they were excreting an excessive amount of VMA per day. (7 refs.)

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MEDICAL ASPECTS — Etiologic Groupings Malnutrition and growth disorders

1044 VELASCO, ELBA G.; ROSSO, P.; BRA-SEL, JOANNE; & *WINICK, M. Activity of alkaline RNase in placentas of malnourished women. American Journal of Obstetrics and Gynecology, 123(6):637-639, 1975.

Objective evidence of malnutrition was found in 18 pregnant women from a low socioeconomic group but was not evident in 11 pregnant women of high socioeconomic status. Findings in the malnourished group included significantly lower birth weight and placental weight, slightly lower nucleic acid and protein content of placentas, and markedly elevated activity of alkaline ribonuclease (RNase). Data on increased alkaline RNase activity in placentas from malnourished women support findings in animals and suggest that activity of this enzyme in placenta may be a useful index of nutritional status in the mother and the fetus. (10 refs.)

Institute of Human Nutrition 511 W. 166th Street New York, New York 10032 abilities of underdevelopment of the human brain as a consequence of undernutrition in the United States. Resources in Education (ERIC), 11(7):233, 1976. 16 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED120321.

As of 1970, more than 2 million pregnant women, infants, and children in the U.S. less than 4 years old were undernourished to the point that they seriously risked brain damage. Once nutrition levels that constitute unambiguous threats to development were established for the U.S. as a whole and for the community of San Diego, California, these criteria were applied to available nutritional and developmental data from large and presumably representative sample populations. Results indicated that blood and urinary biochemistry and anthropometric measures were subnormal; however, these characteristics were less likely as income increased. The results suggest that between one-third and one-half million children

enter American school systems each year who are significantly disadvantaged in performing functions based on developed brain structure and organization. Conservative standards used for predicting risk to brain development should be revised in light of these results.

1046 MARSHALL, W. A. What can we do about tall girls? Archives of Disease of Childhood, 50(9):671-673, 1975.

The management of girls who are worried about becoming very tall includes: 1) excluding pathological causes of tallness (hyperthyroidism, feminizing testes syndrome, XXY and XYY karyotypes, cerebral gigantism, homocystinuria); 2) predicting the child's ultimate height; 3) reassurance, or, occasionally, treatment. When pathological causes are excluded, predicting a child's final height should be based on bone age, although these estimates are subject to error. Active treatment of tallness caused by pathological states should be aimed at the underlying disorder. For nonpathological cases, estrogens and surgical shortening of the limbs are the only treatments. Both forms of treatment are extreme and are justified in only a small number of very tall girls. (9 refs.)

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1047 HEYWORTH, B.; & BROWN, J. Jejunal microflora in malnourished Gambian children. Archives of Disease in Childhood, 50(1):27-33, 1975.

leiunal intubation of 25 Gambian children with protein-calorie malnutrition confirmed reports that bacterial contamination may be responsible for much of the diarrhea seen in malnourished Ss. Considerable bacterial growth (greater than 105 organisms/ml) was found in 22 children, 17 of whom had a history of chronic diarrhea. Of the other 8 children, some had acute attacks lasting for several days. Escherichia coli, bacterioides, and enterococci tended to occur more frequently in children with chronic diarrhea, whereas streptococci were seen more frequently in children with acute cases. Bacilli, staphylococci, micrococci, klebsiellas, pseudomonas, and candidas often occurred in both groups. Bacterial contamination may be important in the pathogenesis of malnutrition. A double-blind study of antibiotics could determine whether it is possible to break the diarrhea-malabsorption malnutrition cycle. The effect of environmental factors should also be evaluated. (22 refs.)

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1048 LEROY, J. G.; DE VOS, J.; & TIMMER-MANS, J. Dominant mesomelic dwarfism of the hypoplastic tibia, radius type. Clinical Genetics, 7(4):280-286, 1975.

A new type of mesomelic dwarfism involving a severe dysostosis of the tibia with shortening, bowing, and pseudarthrosis and a mild dysostosis of the radius was seen in 2 male siblings and their father. The fibulae and ulnae were secondarily affected, but the rest of the skeleton was normal. The primordial anomalies, which were practically symmetrical and concerned only the mesomelic segments of the limbs, differed among the patients only in degree. The father was the least malformed and dwarfed of the 3. The pedigree information with male-to-male transmission was consistent with an autosomal dominant mode of inheritance. Since no ancestors of the affected father were known to have been affected, a new mutation in the germ line of 1 of the paternal grandparents was a probable explanation. (12 refs.)

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1049 PURTILO, DAVID T.; & CONNOR, DANIEL H. Fatal infections in protein-calorie malnourished children with thymolymphatic atrophy. *Archives of Disease in Childhood*, 50(2):149-152, 1975.

The clinicopathological features of 25 children with kwashiorkor or marasmus who died were studied. Atrophy of the thymus glands and thymus-dependent areas in the lymph nodes and spleen was found in all Ss except for 3 infants with marasmus and 1 child with kwashiorkor. Twenty-two patients died of devastating infectious diseases, including 4 with disseminated varicella, 5

with extensive staphylococcal infections, 3 with anergic miliary tuberculosis, 2 of hyperinfections by Strongyloides stercoralis, 2 with cerebral malaria, and 1 each with measles, Herpes simplex, Pneumocystis carinii, diphtheria, salmonellosis, and shigellosis. Twenty of the patients had 2 or more significant infections. Atrophy of the thymolymphatic system may be a morphological manifestation of defective cell-mediated immunity, which probably permitted these infectious agents to multiply and to disseminate widely. (22 refs.)

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1050 ROSEN, E. U.; GEEFHUYSEN, J.; ANDERSON, R.; JOFFE, M.; & *RABSON, A. R. Leucocyte function in children with kwashiorkor. Archives of Disease in Childhood, 50(3):220-224, 1975.

Leukocyte response to infection, polymorphonuclear leukocyte (PMN) chemotaxis and bactericidal ability, and nitroblue tetrazolium (NBT) reduction were studied in children with kwashiorkor who were between 6 months and 2 years old. Results were compared to findings in well-nourished children. In children with kwashiorkor, total leukocyte counts were depressed and lymphopenia was found in 8 out of 20 children. NBT reduction was normal. It appears that, apart from some impairment in leukocyte mobilization, the quality of PMN function is normal in kwashiorkor. Any abnormality in PMN chemotaxis appears to be due to infection and not to protein depletion. (21 refs.)

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1051 CHANDRA, R. K. Serum complement and immunoconglutinin in malnutrition. Archives of Disease in Childhood, 50(3):225-229, 1975. Decreases in serum hemolytic complement activity and serum complement C3 were observed in 35 protein-calorie malnourished children (6 months to 4 years old). These changes were more pronounced in infected Ss. In 14 children C3 levels and immunoconglutinin titers were inversely related. Abnormalities were reversed by nutritional rehabilitation and control of infection. The low level of complement in undernourished children and its increase to the normal range in response to dietary treatment suggest that the nutritional status of the individual can influence the complement system. Increased susceptibility of malnourished children to infection could be partially explained by this defect. Reduced complement function in malnutrition may be the combined result of impaired synthesis, complement activation in vivo, and changes in plasma volume. (35 refs.)

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1052 SMITH, STEPHEN R.; EDGAR, PAUL J.; POZEFSKY, THOMAS; CHHETRI, M. K.; & PROUT, THADDEUS E. Insulin secretion and glucose tolerance in adults with protein-calorie malnutrition. *Metabolism*, 24(9):1073-1084, 1975.

Glucose tolerance, insulin secretion, and related phenomena were studied in 17 adults with severe protein-calorie malnutrition (PCM). Insulin response was examined during an intravenous glucose tolerance test and following arginine infusion both during PCM and after clinical recovery following 2 to 4 months of refeeding. Insulin secretory response was severely reduced in PCM, and insulin resistance relative to body weight appeared to be present. These changes produced markedly diminished glucose tolerance and probably also diminished intracellular uptake of amino acids. An apparently decreased rate of intracellular oxidation and/or storage of glucose and amino acids in the postprandial state resulted in more prolonged availability of these substances in the plasma during periods of malnutrition. The changes in insulin secretion and action may provide improved adaptation to chronic PCM. Findings have implications for reversible glucose intolerance in childhood PCM and kwashiorkor. (43 refs.)

1053 BECKER, D. J.; *PIMSTONE, B. L.; KRONHEIM, S.; & WEINKOYE, E. The effect of alanine infusions on growth hormone, insulin, and glucose in proteincalorie malnutrition. *Metabolism*, 24(8):953-958, 1975.

The role of alanine in the pathogenesis of an apparent raised serum growth hormone (HGH) and poor insulin responses in protein-calorie malnutrition (PCM) was investigated in 9 children (9 to 34 months old). Thirty-minute alanine infusions were performed in 5 children, and 12-hour infusions were administered to 4 children with PCM before and after therapy. Although the elevated HGH found in malnourished children correlated inversely with serum alanine, the administration of this amino acid, either over 30 minutes or as a 12-hour infusion, failed to depress HGH levels. Concomitant replacement of large amounts of other amino acids may be necessary to account for the rapid growth hormone drop reported after milk feeding. Insulin was virtually unchanged after alanine administration, but its response to glucose was enhanced in 3 of 4 children after more substantial alanine replacement. (16 refs.)

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1054 CHAMBERLAIN, ROMA; & DAVEY, ALAN. Physical growth in twins, postmature and small-for-dates children. Archives of Disease in Childhood, 50(6):437-442, 1975.

To determine the effects of possible fetal malnutrition on subsequent physical growth, height, weight, and head circumference measurements were obtained at 22 months of age for a 10 percent sample of children born during 1970, children born at or later than 42 weeks gestation, children of multiple births, and singleton children of low birth weight for the period of gestation. The pattern of distribution of weight was much closer to the normal than that of the babies' birth weights. However, both twins and small-for-dates babies were on average lighter and shorter than the sample population; twins were of the same build, but small-for-dates babies were much lighter than their heights. Head sizes of small-for-dates babies were in the same proportion to body size as controls, but twins had comparatively larger heads for their bodies. Mean measurements of the postmature group did not vary statistically from the controls, but they were lighter than expected for their height. Conclusions concerning the finding of an association between physical and mental growth of these groups of children must take into account the diverse patterns of postnatal growth. (11 refs.)

Paediatric Unit St. Mary's Hospital Medical School London W2, England

1055 HASSANEIN, E. A.; & TANKOVSKY, I. Disseminated intravascular clotting in kwashiorkor. Archives of Disease in Childhood, 50(4):308-310, 1975.

In 22 patients with kwashiorkor, the role of disseminated intravascular clotting (DIC) in the pathogenesis of bleeding diathesis was studied. Two grades of disseminated intravascular clotting (DIC) were observed and related to the severity of clinical and hematological findings. The diagnosis of DIC in 6 severe cases (5 fatal) was based on the presence of thrombocytopenia, hypofibrinogenemia, and multiple coagulation defects. Less severe DIC in 16 patients (7 fatal) was manifested by thrombocytopenia, low fibrinogen level, and a clotting factor defect mainly due to prothrombin deficiency. In the management of DIC syndrome in patients with kwashiorkor, early and rapid correction of dehydration with replacement of electrolyte loss is important. (6 refs.)

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1056 CHANDRA, R. K. Food antibodies in malnutrition. Archives of Disease in Childhood, 50(7):532-534, 1975.

The frequent presence of blood antibodies to multiple dietary proteins was confirmed in a study of 20 malnourished infants 6 to 30 months old. Most antibody activity was confined to the immunoglobulin G (IgG) and immunoglobulin A (IgA) classes, with IgG antibody titer exceeding that of IgA in most samples. Ingestion of food items to which antibodies were demonstrated did not result in untoward symptoms, and complement activation was not observed *in vivo*. Factors which may contribute to the frequent occurrence

of food antibodies in malnourished children include atrophied gut mucosa, reduced secretory immune response, and impaired phagocytic function of the hepatic reticuloendothelial system. No immediate immunopathological role seems to be played by food antibodies. (35 refs.)

Memorial University of Newfoundland St. John's, Newfoundland, Canada

1057 INGENBLEEK, Y.; & BECKERS, C. Triiodothyronine and thyroid-stimulating hormone in protein-calorie malnutrition in infants. *Lancet*, 2(7940):845-848, 1975.

Total 3,5,3'-triiodothyronine (T₃) was measured in 43 Seneglese children (CA 18 to 30 mos) with severe protein-calorie malnutrition (PCM). Serum-T₃ concentrations were significantly lower than normal in PCM children on admission (p<0.001) and on the eighth day (p<0.001) of the study but increased rapidly during the first 2 weeks of dietary therapy and returned to normal on and after the fifteenth day of treatment. The mean serum-T₃ concentration before therapy was 23.3 percent of normal in the PCM children as a whole, with the drop significantly (p<0.001) more pronounced in kwashiorkor of recent onset than in long-term PCM. Serum thyroid-stimulating hormone (TSH) was within the normal range throughout the entire course of therapy in children with frank kwashiorkor, an indication that they remained euthyroid. However, impairment of the TSH/T3 feedback mechanism and a hypophysectomy-like condition in children with protracted PCM required 2 weeks of optimum refeeding for correction. (26 refs.)

Institut Clinique de Nutrition Infantile University of Dakar, Senegal

1058 THOMSON, A. M. Maternal malnutrition and low birth-weight. Lancet, 2(7939):815, 1975. (Letter)

A previous letter concerning maternal-fetal priorities made some unjustifiable criticisms. First, the women studied in Aberdeen during the 1950's did not eat unusually large amounts of fish protein. Moreover, a review of Stein and Susser's book on the Dutch famine did take the problem of controls into consideration. The reduction in birth weights

during the famine was followed by a sharp rise in infant mortality, especially after the first week, but adverse effects on perinatal mortality were surprisingly slight and affected both the famine and the control areas. (1 ref.)

M.R.C. Reproduction and Growth Unit Princess Mary Maternity Hospital Great North Road Newcastle upon Tyne, NE2 3BD England

1059 Ad Hoc Committee to Review the Ten-State Nutrition Survey. Reflections of dietary studies with children in the Ten-State Nutrition Survey of 1968-1970. Pediatrics, 56(2):320-326, 1975.

The dietary component of the Ten-State Nutrition Survey, designed to provide a description of food consumption for persons of many ages, including infants and small children 0 to 36 months old and adolescents 10 to 16 years old, has highlighted the quantity of food, not the quality, as the major dietary problem. Physical (anthropometric) and biochemical evidence of malnutrition or of "nutritional risk" among children in the Survey reflected primarily an inadequacy of total energy intake and not improper selection of foods or unbalanced diets. With per capita income, sex, and CA held constant, black children showed somewhat lower median intakes of energy and of most nutrients than did white children. Among Spanish-American children, there were substantial differences between Mexican-American (Southwest) and Puerto-Rican (Northeast) children. The Mexican-American children in Texas were among the least well-nourished in the entire survey. (9 refs.)

1060 GARN, STANLEY M.; & CLARK, DIANE C. Nutrition, growth, development, and maturation: findings from the Ten-State Nutrition Survey of 1968-1970. *Pediatrics*, 56(2):306-319, 1975.

The findings of the Ten-State Nutrition Survey of 1968-1970, the first and most comprehensive attempt to survey the nutritional status of Americans of all ages, far exceeded the original expectations of the study. Altogether, 86,352 individuals were contacted, 40,847 participants were studied from an anthropometric, dietary, or

biochemical point of view, and data on nearly 16,000 participants in the pediatric age group were gathered and analyzed. The Ten-State data (from 10 states and New York City) did not show evidence of acute Biafra-type malnutrition, even in the lowest (below-poverty) income groupings. Radiographically, the study contributed much new and valuable information on the effects of nutritional status on ossification timing, bone remodeling and bone lengths, and proportions during growth. The survey has been criticized for not finding rampant malnutrition, for apparently overreporting growth retardation and size diminution for the United States as a whole, and for limited geographic representation. Nevertheless, the data it has yielded are very significant. (38 refs.)

1061 LOWRY, R. B.; & WIGNALL, N. Saldino-Noonan short rib-polydactyly dwarfism syndrome. *Pediatrics*, 56(1):121-123, 1975.

Saldino-Noonan short rib-polydactyly dwarfism was apparent in a 2,045gm male infant born to a mother suffering from posttraumatic epilepsy for which she took methsuximide (Celontin). The medication was taken during this and an earlier pregnancy, from which a normal girl was delivered. The S presented with a crown-heel measurement of 33cm and arm measurements of 11cm, postaxial polydactyly on both hands and both feet, extremely short digits, particularly of the hands, large abdomen with a palpable mass in thh suprapubic area, very small penis and scrotum, edematous head, low-set ears, anteverted nostrils,

small thorax and lungs, short intestines, and abnormal kidney structure, among other defects. Radiographic study confirmed the short-limb dwarfism with short ribs and bifid right fifth rib. Polymetacarpalia of the third left digit, short limbs with irregular metaphyses and pointed spicules of bone, small iliac bones and horizontal acetabulae, and an associated ossification defect were seen. Methsuximide was not believed to be responsible. (5 refs.)

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1062 GUPTE, SURAJ. Marasmus and kwashiorkor. Pediatrics, 56(1):152, 1975. (Letter)

Experience regarding the average daily intake of calories and proteins, based on an oral questionnaire technique, indicates that children suffering from nutritional marasmus and kwashiorkor on the Indian subcontinent had been consuming a diet grossly deficient in calories as well as proteins. Protein deficiency was much greater in kwashiorkor, and calorie deficiency in nutritional marasmus. The future approach to the prevention and treatment of protein-calorie malnutrition should be directed towards an adequate emphasis on calories as well as on the protein concentrates that have been stressed during the past decade. (2 refs.)

1

Department of Pediatrics H. P. Medical College Simla, H. P., India

MEDICAL ASPECTS — Etiologic Groupings Inborn metabolic errors

1063 DONNELLY, PATRICIA V.; & *DI FERRANTE, NICOLA. Reliability of the Booth-Nadler technique for the detection of Hunter heterozygotes. *Pediatrics*, 56(3):429-433, 1975.

To confirm Booth and Nadler's finding that freezing of cultured skin fibroblasts of Hunter heterozygotes may facilitate identification of phenotypically normal carriers, cultured fibroblasts from obligated Hunter heterozygotes,

Hunter patients, and normal controls were rapidly frozen in liquid nitrogen. Monolayers were obtained within 2 weeks after thawing, and the incorporation of radiolabeled sulfate and the degradation of sulfate-labeled intracellular glycosaminoglycans were measured. Skin fibroblast from 3 obligated and 1 potential heterozygote for the Hunter gene displayed abnormal metabolism of glycosaminoglycans 4 to 6 weeks after freezing. The technique seems to be useful for the identification of Hunter carriers, especially when

the degradation of radiolabeled sulfate-labeled intracellular glycosaminoglycans is measured. (7 refs.)

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1064 TZE, WAH JUN; SAUNDERS, JOHN; & DRUMMOND, GEORGE IAN. Urinary 3'5' cyclic AMP diagnostic test in pseudohypoparathyroidism. Archives of Disease in Childhood, 50(8):656-658, 1975.

Measurement of urinary adenosine 3'5'-cyclic monophosphate (cyclic AMP) during hormone infusion may be the best method of diagnosis in pseudohypoparathyroidism. In 2 patients, infusion of parathyroid hormone failed to effect any change in urinary cyclic AMP, while a dose-dependent increase in urinary cyclic AMP occurred in a control case. The renal cortical tissue may be unresponsive to parathyroid hormone in pseudohypoparathyroidism. (9 refs.)

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1065 PAVONE, LORENZO; MOLLICA, FLO-RINDO; & LEVY, HARVEY L. Asymptomatic type II hyperprolinaemia associated with hyperglycinaemia in three sibs. Archives of Disease in Childhood, 50(8):637-641, 1975.

Biochemical features of type II hyperprolinemia were found in 3 clinically normal sibs in a routine serum amino acid screening program in Sicily. All 3 children also had marked hyperglycinemia, an unusual finding in association with hyperprolinemia. Parents of these 2 children had both normal blood proline and glycine concentrations. Absence of clinical abnormalities in individuals with hyperprolinemia may indicate that these metabolic disorders are benign. It appears that neither marked hyperprolinemia nor hyperglycinemia alone causes brain damage. (25 refs.)

Paediatric Clinic University of Catania Catania, Italy 1066 ROBERTON, N. R. C.; & SMITH, M. A. Early neonatal hypocalcaemia. Archives of Disease in Childhood, 50(8):604-609, 1975.

A prospective study of the incidence of the early type of hypocalcemia was carried out in 131 ill newborn infants with indwelling umbilical artery catheters. Although 51 infants (15 deaths) had early neonatal hypocalcemia, only 2 cases of hypocalcemic convulsions were seen in a total of 8,700 deliveries. There was no difference in birthweight and gestational age between the hypocalcemic and normocalcemic infants in the ill group. Serum calcium levels in infants exposed to various stress factors were significantly lower than levels in infants not so exposed. Factors related to hypocalcemia in ill infants were longer exposure to oxygen and low calcium intake. Administration of intravenous or oral calcium gluconate was associated with a rise in serum calcium in 35 infants who were hypocalcemic before 48 hours of age. Daily serum calcium estimates should be carried out in all sick low birth weight infants. (22 refs.)

Department of Paediatrics University of Oxford John Radcliffe Hospital Oxford, England

1067 KAROUM, F.; RUTHVEN, C.R.J.; & *SANDLER, M. Urinary phenolic acid and alcohol excretion in the newborn. Archives of Disease in Childhood, 50(8):586-594, 1975.

Simple gas chromatographic techniques were used to study quantitatively the excretion of a number of phenolic acids and alcohols during the first weeks of life and to assess the effects of prematurity and jaundice. Rises in 4-hydroxy-3methoxymandelic acid (VMA) were seen immediately after birth in term but not in preterm Ss. Similar increases in homovanillic acid (HVA) were seen only in nonjaundiced term babies; a steady rise during the first week was seen in nonjaundiced preterm infants. The ratio of HVA to VMA output was higher in these infants than in adults, and both HVA and VMA excretion values were directly related to urine volume. During the first 2 days of life, HVA output in jaundiced (as opposed to nonjaundiced) infants decreased. The ratio of 4-hydroxy-3-methoxyphenyl-glycol to VMA was

the same as in adults. Para-hydroxyphenyl-lactic acid (p-HPLA) was used as an index of tyrosyluria. A significant rise in p-HPLA was associated with prematurity. A marked increase of this acid in jaundiced newborn infants may reflect general enzyme immaturity. (51 refs.)

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1068 SAUGSTAD, LETTEN FEGERSTEN. Anthropological significance of phenylketonuria. Clinical Genetics, 7(1):52-61, 1975.

The birthplaces of the grandparents of the 146 persons with phenylketonuria (PKUs) from 117 families identified in Norway up to January 1973 were investigated. A relationship was found between birthplaces of PKU ancestors and the sites where Viking graves contained Western imported bronze objects. In several regions, the place of birth of a PKU grandparent was identical with a site where Western imported objects had been discovered in a Viking grave. The similarity between the settlement in the Viking age and today's settlement confirmed a continuity of residence for more than 1,000 years in most parts of Norway. To a great extent, the birthplaces of PKU grandparents were scattered over Norway, indicating descent from a Celtic subpopulation which had become completely assimilated. The birthplaces of the PKU grandparents were located in the rural areas, and those of the PKU grandchildren mainly in the urban centers, a difference consistent with the internal migration taking place in Norway in the same period. The remarkable resemblance between Iceland and Ireland regarding several genetic markers and their identical, high incidence rates of PKU are evidence of a similar proportion of people of Celtic origin in the 2 countries. (53 refs.)

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1069 SAUGSTAD, LETTEN FEGERSTEN. Frequency of phenylketonuria in Norway. Clinical Genetics, 7(1):40-51, 1975.

The incidence of phenylketonuria (PKU) in Norway between 1966 and 1972, when neonatal screening was performed on only about one-third of the total number of births, was compared with that in preceding years, when PKUs were identified because of MR. By January 1973, a total of 146 cases (born between 1875 and 1972) had been identified in Norway. (This total is incomplete, particularly with regard to PKU cases born before 1950, because of the PKU mortality rate.) Between 1965 and 1972, early diagnosis was missed in 14 of 35 PKUs. This figure would have been reduced to 3 if hematological screening had included all births in this period. At least 10 of the 14 MR PKUs identified in this period had escaped diagnosis by Feinstix testing in infancy. When directly estimated from newborn screening, the incidence of PKU in Norway was 0.07±0.02 per 1,000 liveborn screened between 1966 and 1972, while the indirect estimate was 0.14 for 1874-1918 and 0.08 for 1874-1941. As expected, the observed incidence of 0.07±0.02 per 1,000 liveborn screened in Norway was well below the observed incidence of 0.11±0.01 per 1,000 and considerably higher than the observed value of 0.03±0.01 per 1,000 from Danish and Swedish screening data, respectively. Between 1951 and 1964, PKUs were ascertained only because of MR, and the observed frequency was 0.06 per 1,000 live births. (37 refs.)

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1070 ARMSTRONG, MARVIN D. Maternal histidinaemia. Archives of Disease in Childhood, 50(10):830-831, 1975.

Biochemical signs of typical histidinemia were observed in a 42-year-old woman with no history of abnormal development or of physical or mental abnormality. Her fasting plasma histidine levels were 0.73, 0.52, and 0.79µmol/ml in 3 samples over a 6-month period. Values for histidine and its metabolites in urine were typical of those reported for histidinemic individuals. The woman's 4 sons (12 to 21 years old) had normal fasting histidine levels and showed no signs of slow or abnormal development. Typical histidinemia can be a completely benign condition. (8 refs.)

Fels Research Institute Yellow Springs, Ohio 45387 1071 TERHEGGEN, H. G.; LOWENTHAL, A.; LAVINHA, F.; & COLOMBO, J. P. Familial hyperargininaemia. Archives of Disease in Childhood, 50(1):57-62, 1975.

Typical signs of hyperargininemia were observed in the third child born to a family in which the parents and 2 other sibs were heterozygous for this disorder. Biochemical findings in this disorder of urea synthesis with arginase deficiency included arginemia, hyperammonemia, and serum urea concentrations near the lower normal level. The urine showed a cystinuria pattern with marked arginuria. The enzymatic defect was further exhibited in intravenous loading tests with arginine. There was no excretion of guandinosuccinic acid in urine, but the excretion of other monosubstituted guanidine derivatives was increased. A low protein diet (1.5g/kg) was introduced late due to parental attitudes, but the infant developed SMR, athetosis, and spasticity. Brain injury might have resulted from late institution of the diet, congenital damage, or factors other than chronic ammonia intoxication. (24 refs.)

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1072 GIBBS, K.; & WALSHE, J. M. Treatment of Wilson's disease. *British Medical Jour*nal, 4(5998):706, 1975. (Letter)

The cupruretic activity of metronidazole was tested with 2 patients who had presented with hepatic Wilson's disease and who had each been taking penicillamine for 2 years. No drugs were given for 72 hours, and basal copper excretion was estimated in a 15.5-hour overnight urine sample. The patients then received 450mg of penicillamine hydrochloride, and urine was collected for 6 hours. The test was repeated 48 hours later using a dose of 500mg of metronidazole. The results indicated that metronidazole does not have a sufficient cupruretic action to warrant long-term trial in patients with Wilson's disease. Until an alternative compound is found which will actively promote the excretion of copper, triethylene tetramine dihydrochloride remains the best available therapy for penicillamine-intolerant patients with Wilson's disease.

University Department of Medicine Aldenbrooke's Hospital Cambridge, England 1073 HILL, HELENE Z. Detection of inborn errors of metabolism. IV. Galactokinase deficiency. Clinical Genetics, 8(3):179-182, 1975.

Cultured cells from a patient with galactokinase deficiency, 2 patients with galactosemia, and 2 normal persons were tested using a method involving differential incorporation of galactose-1-3H into TCA-insoluble material. The kinase deficient cells were readily distinguishable from the other 2 cell types, since they incorporated very little radioactive galactose under normal conditions of incubation. Thus, the test proposed by Hill & Puck (1973) should be useful in distinguishing cells with defects in the galactose pathway from normal cells, while defects in the pathway so detected can be further subdivided by the test utilized here. Using this simple culture system and previously described similar tests, it should now be possible to detect 2 defects of galactose metabolism, 2 defects of urea cycle metabolism, and 5 defects in propionic acid metabolism. The present method cannot be used to distinguish heterozygotes for galactokinase deficiency. (7 refs.)

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1074 CORBEEL, L.; TADA, K.; COLOMBO, J. P.; EECKELS, R.; EGGERMONT, E.; JAEKEN, J.; DEN TANDT, W.; HAR-VENGT, L.; DELHAYE, J.; & DELOECKER, W. Methylmalonic acidaemia and nonketotic hyperglycinaemia: clinical and biochemical aspects. Archives of Disease in Childhood, 50(2):103-109, 1975.

Clinical and metabolic data were obtained for 2 girls with methylmalonic and propionic acidemia and for 2 female siblings and another girl with nonketotic hyperglycinemia. Propionic acid was conspicuously increased in the plasma of the 2 patients with methylmalonic acidemia and was slightly raised in the parents of 1 child. Liver enzymatic studies showed decreased activity in vitro of the glycine cleavage enzyme in 1 of these patients and in 2 unrelated patients with nonketotic hyperglycinemia. Myelin was totally absent in the brain of 1 patient with nonketotic hyperglycinemia. Hyperammonemia occurred in

this patient as well as in 1 child with methylmalonic acidemia. The liver enzyme activities of the urea cycle were normal for this nonketotic child except for a decrease of carbamyl phosphate synthetase to 15 percent of normal. (31 refs.)

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1075 SILLENCE, D. O.; & COURT, J. M. Glibenclamide-induced hypoglycaemia. British Medical Journal, 3(5981):490-491, 1975. (Letter)

Permament cerebral damage, epilepsy, and possible MR were observed in a 42-month-old child a year after he was treated for ingesting glibenclamide. These sequelae were attributed to a hypoglycemic effect which lasted 48 to 72 hours after ingestion. A marked decrease in blood sugar with lower than normal blood sugar values persisting for more than 6 hours (total investigation time) was reported in a previous study of normal children (5 to 15 years old) who ingested as little as 2.5mg of glibenclamide. A prolonged hypoglycemic reaction to glibenclamide in adults has not been documented. (3 refs.)

Royal Children's Hospital Parkville, Victoria, Australia

1076 SCHNEIDER, ARTHUR B.; & SHER-WOOD, LOUIS M. Pathogenesis and management of hypoparathyroidism and other hypocalcemic disorders. *Metabolism*, 24(7):871-898, 1975.

New information about calcium homeostasis in the clinical situation encountered in the patient with hypocalcemia is reviewed. The balanced actions of parathyroid hormone (PTH), vitamin D, and, to a lesser degree, calcitonin are necessary for the maintenance of a normal serum calcium concentration. Hormone secretion is decreased or absent in primary hypoparathyroidism, while secretion is stimulated in most other forms of hypocalcemia. Several recognized forms of pseudohypoparathyroidism each represent a defect at a different site of PTH action. Calcitonin excess, as noted in medullary carcinoma of the thyroid, could cause calcemia, but it rarely does. Chronic ingestion of

certain drugs can lead to osteomalacia and hypocalcemia. Severe renal damage limits the conversion of vitamin D to its active form and affects vitamin D resistance. Chronic hypocalcemia is a very difficult therapeutic problem; the therapy of acute hypocalcemia can usually be accomplished readily. (131 refs.)

Department of Medicine Michael Reese Medical Center 29th Street and Ellis Avenue Chicago, Illinois 60616

1077 WISE, P. H.; BURNET, R. B.; GEARY, T. D.; & BERRIMAN, HELEN. Selective impairment of growth hormone response to physiological stimuli. Archives of Disease in Childhood, 50(3):210-214, 1975.

Human growth hormone (HGH) levels were examined in response to simple intensive exercise, after the onset of slow-wave sleep, and with a standardized sequence of arginine and insulininduced hypoglycemic stimulation in 25 consecutive children being evaluated for defective growth. EEG-monitored slow-wave sleep provided discriminatory serum HGH responses equal to those provided by arginine and insulin-induced hypoglycemia. Although exercise was less effective, it provided a useful screening test. Therapeutic administration of HGH resulted in significant growth in 1 S with abnormal physiological but normal pharmacological serum growth responses; advanced epiphyseal maturity precluded adequate evaluation in another S. Normal HGH levels with pharmacological stimuli did not exclude a growth response to HGH administration (15 refs.)

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1078 MARTIN, F. I. R.; DAHLENBURG, G. W.; RUSSELL, JOAN; & JEFFERY, P. Neonatal hypoglycaemia in infants of insulindependent diabetic mothers. Archives of Disease in Childhood, 50(6):472-476, 1975.

The frequent occurrence of severe neonatal hypoglycemia (blood glucose greater than 10mg/100ml) in infants born to insulin-dependent

diabetic mothers was noted in a study of 34 babies. In 25 of the infants, neonatal hypoglycemia (blood glucose greater than 20mg/100ml) occurred in the first 6 hours of life. Hypoglycemia was severe in 17 infants, but clinical features were present in only 2 cases. There was no relation between hypoglycemia and level of plasma insulin in cord blood or the degree of control of maternal blood glucose during pregnancy. Abnormalities in the induction, activity, or concentration of glycogenolytic and/or gluconeogenic enzymes may be responsible for neonatal hypoglycemia in infants of diabetic mothers. (21 refs.)

Department of Endocrinology Royal Melbourne Hospital Melbourne, Victoria 3050, Australia

1079 SIMILA, S.; KOIVISTO, M.; RANTA, T.; LEPPALUOTO, J.; REINILA, M.; & HAAPALAHTI, J. Serum tri-iodothyronine, thryoxine, and thyrotrophin concentrations in newborns during the first 2 days of life. Archives of Disease in Childhood, 50(7):565-567, 1975.

Concentrations of thyroxine (T_4) , tri-iodothyronine (T_3) , and TSH were examined in newborns at intervals during the first 2 days of life, and strong and rapid changes were seen. Radioimmunoassay showed that T_4 concentration increased slowly, reaching its maximum at 24 hours, but at 48 hours serum T_4 level was still significantly higher than at birth. T_3 secretion was low at birth, and TSH secretion was stimulated strongly but transiently after birth. The low T_3 secretion and TSH release rapidly normalized within 2 hours. These rapid changes suggest that screening of the function of the pituitary-thyroid axis in newborn infants is more reliable after the age of 24 hours. (8 refs.)

Department of Paediatrics and Physiology University of Oulu Oulu, Finland

1080 HAMILTON, W.; & *HUTCHINSON, JAMES H. Raised serum TSH in hypothyroidism. Archives of Disease in Childhood, 50(7):567-569, 1975.

Mild hypothyroidism was detected by assay of serum thyroid stimulating hormone (TSH) in a

5-year-old girl with growth failure but no overt signs of abnormal thyroid function. Serum TSH level was $310\mu U/ml$ (normal: undetectable to $4\mu U/ml$), while other tests of thyroid function yielded normal results. Serum TSH returned to normal after treatment with thyroxine. It is important to assay serum TSH when hypothyroidism is suspected. Patients with mild hypothyroidism have a raised serum TSH, but thyroid insufficiency can be excluded if the serum TSH concentration is normal. (4 refs.)

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1081 POWELL, HENRY; TINDALL, RICH-ARD; SCHULTZ, PAUL; PAA, DAVID; O'BRIEN, JOHN; & *LAMPERT, PETER. Adrenoleukodystrophy: electron microscopic findings. Archives of Neurology, 32(4):250-260, 1975.

Electron microscopic studies of 3 male patients with adrenoleukodystrophy provided morphologic evidence of pathognomic cytoplasmic inclusions in parenchymal and reticuloendothelial cells suggestive of a storage disorder affecting both the adrenal cortex and the cerebral white matter. The affected white matter contained enlarged glial cells filled with pathognomic intracytoplasmic inclusions, consisting of electron-lucent spicules bounded by 25-Angstrom wide membranes. In adrenocortical cells, similar inclusions were observed. These findings and a review of 47 reported cases indicate that adrenoleukodystrophy is a storage disorder caused by a sex-linked recessive error of metabolism. (63 refs.) (Author abstract modified)

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1082 O'BRIEN, JOHN S.; BERNETT, JOLE; VEATH, M. LOIS; & PAA, DAVID. Lysosomal storage disorders: diagnosis by ultrastructural examination of skin biopsy specimens. Archives of Neurology, 32(9):592-599, 1975.

The use of ultrastructural examination of skin biopsy specimens for diagnosis of lysosomal storage diseases simplifies the diagnostic work-up and obviates the necessity of major surgery for tissue examination. Fifteen patients were examined and their various diagnoses included: Sanfilippo disease, types A and B; Hurler disease; GM1 gangliosidosis, type 1; Jansky-Bielschowsky and Spielmeyer-Vogt types of amaurotic idiocy; Fabry disease; glycogen storage disease, type 2; Niemann-Pick disease, type A; Krabbe disease; and infantile Gaucher disease. Ultrastructural examinations were undertaken on tissue obtained by skin biopsy for enzymatic studies of cultured skin fibroblasts. Except for those patients with infantile Gaucher disease, Krabbe disease, and Spielmeyer-Vogt disease, diagnostic storage inclusions were found in all patients. This procedure could be carried out on a specimen obtained on an outpatient basis by a primary physician and would avoid the need for major surgery. (18 refs.)

Department of Neurosciences University of California at San Diego La Jolla, California 92037

1083 DEKABAN, ANATOLE S.; AAMODT, ROGER; RUMBLE, WARREN F.; JOHN-STON, GERALD S.; & O'REILLY, SEAN. Kinky hair disease: study of copper metabolism with use of ⁶⁷Cu. Archives of Neurology, 32(10):672-675, 1975.

Copper metabolism was appraised in 3 patients with Menkes kinky hair disease (KHD) both by determining the internal kinetics of copper, using 67Cu, and by determining the factual extent of the defect in the absorption of orally administered copper. Oral absorption, excretion, and internal kinetics of labeled copper administered first intravenously and later orally were examined. Patients with KHD absorbed 11-13 percent of copper given orally, compared to 46 percent by unaffected controls. Patients with KHD also demonstrated a greatly reduced total excretion of Cu given intravenously during the first 7 days after administration. The biological half-life of 67Cu in KHD patients was 2-3 times that of the half-life in normal controls. The liver retained most of the labeled copper in the KHD patients, while in controls copper moved rapidly to ceruloplasmin. In patients with KHD, red blood cells preferentially incorporated orally administered copper, and this was sufficient to prevent anemia. (17 refs.)

Developmental and Metabolic Neurology Branch NINCDS Clinical Center Building 10, Room 4N-248 National Institutes of Health Bethesda, Maryland 20014

1084 PETERSON, DONALD I.; BACCHUS, HABEEB; SEAICH, LAIRD; & KELLY, THADDEUS E. Myelopathy associated with Maroteaux-Lamy syndrome. *Archives of Neurology*, 32(2):127-129, 1975.

A case of severe myelopathy due to spinal cord compression in the cervical area in a case of mucopolysaccharidosis VI (MPS VI, Maroteaux-Lamy syndrome) without atlanto-axial abnormality was studied and successfully treated. The patient, a 23-year-old woman, was seen for a single grand mal seizure and was initially diagnosed as suffering from Scheie syndrome (MPS 1S). She was admitted to surgery for carpal tunnel syndrome and did well for several months with no overt neurological impairment of function until she became pregnant. There was severe neurological deterioration with spastic quadriparesis and impairment of sphincter function during the last trimester of pregnancy, and no improvement 2 months after delivery. After a cervical laminectomy and longitudinal splitting of the dura from C-5 to the foramen magnum, there was good return of function. (8 refs.)

Neurology Section Loma Linda University School of Medicine Loma Linda, California 92354

1085 KORNFELD, MARIO; SYNDER, RUS-SELL D.; MACGEE, JOSEPH; & *AP-PENZELLER, OTTO. The oculo-cerebralrenal syndrome of Lowe: neuromuscular components. Archives of Neurology, 32(2):103-107, 1975.

The hypotonia and areflexia observed in 5 patients with Lowe's syndrome were the result of peripheral nerve dysfunction. Nerve and muscle biopsy specimens from 5 children with the oculo-cerebro-renal syndrome of Lowe were subjected to clinical, light microscopical, ultra-structural, and biochemical studies. All of the patients were boys, and 4 of them were American

Pueblo Indians, a racial group in whom Lowe's syndrome has not been previously reported. Slowed motor nerve conduction velocities were responsible for the observed hypotonia, areflexia, and diffuse atrophy of muscles. A 'dying-back' phenomenon, probably resulting from an unknown metabolic derangement, caused the morphologic changes in sensory nerves. Spinal cord lesions were probably in the peripheral nerves or muscle, in view of the hypotonia and areflexia displayed by the patients. (18 refs.)

*Department of Neurology University of New Mexico School of Medicine 1007 Stanford Dr. N.E. Albuquerque, New Mexico 87131

1086 GERSHEN, JAY ALAN. Galactosemia: a psycho-social perspective. Mental Retardation, 13(4):20-23, 1975.

Clinical aspects of galactosemia are briefly reviewed, and 6 long-term studies are summarized which deal with psychological, social, and developmental factors in individuals with the disorder. Findings indicate the importance of early diagnosis and diet therapy in galactosemic children. A reduction in the degree and severity of cognitive damage was related to the institution of a galactose-free diet at birth. Although intelligence quotients of galactosemic children were spread over the entire intelligence range, most patients clustered in the low normal-borderline range. Low levels of academic achievement may be related to perceptual-motor handicaps. Although these children presented no significant behavioral problems in school, minor personality disorders may be related to their reactions to having a chronic disease. Special education is appropriate for MR patients, and the cooperation of physicians, psychologists, social workers, nutritionists, and public health nurses is necessary to help children with galactosemia. (14 refs.)

Department of Educational Psychology University of California Los Angeles, California 90024

1087 SIMILA, SEPPO; & KOUVALAINEN, KAUKO. Ethic of taking blood samples in newborns. Archives of Disease in Childhood, 50(7):575, 1975. (Letter) Ethical justification is presented for taking blood samples from newborn infants in a study on the adaptation of the pituitary-thyroid axis after birth. The study of 10 newborn infants gave new theoretical and practical information and did not, as far as is known, harm the babies. Results clearly showed that screening tests for thyroid functions should not be performed until after the age of 24 hours. Clear-cut data on normal values from the same individual were made available for the first time. (5 refs.)

Department of Paediatrics University of Oulu 202220 Oulu 22, Finland

**BLASKOVICS, M. Phenylalaninaemia.

**Archives of Disease in Childhood,
50(7):576-578, 1975. (Letters)

Comments on a report on phenylalaninemia (Blaskovics, Schaeffler, and Hack, 1974) relating to evaluation of suspected cases of phenylketonuria and dietary treatment are directed toward: the over-complexity of the classification of phenylketonuria which is proposed; and the importance of estimating the daily phenylalanine intake of patients during dietary treatment and at age 1. These observations help to determine the need for further strict dieting or liberalization of intake with a view to stopping treatment. Dr. Blaskovics' rebuttal utilizes the correspondents' own data as an argument for the more complex classification. He also points out the extreme variability of intraindividual samples from day to day and emphasizes the need for diagnoses based on a standardized challenge, so that differences in responses may be more fully correlated with realistic prognoses. (3 refs.)

*Alder Hey Children's Hospital Eaton Road Liverpool L12 2AP, England

**PKU Clinic Children's Hospital of Los Angeles 4650 Sunset Boulevard Los Angeles, California 90054

1089 BRADLEY, D. M. Screening for inherited metabolic disease in Wales using urine-impregnated filter paper. Archives of Disease in Childhood, 50(4):264-268, 1975.

A screening program for inherited metabolic disease in Wales has used urine specimens collected at home by parents between the tenth and fourteenth days of life. Specimens were collected from 135,259 infants on filter paper, and spot tests and paper chromatography were used to test for 7 abnormal urinary constituents. This screening method has identified 5 infants with phenylketonuria, 4 with histidinemia, 5 with cystinuria, 5 with diabetes mellitus, and 1 with alcaptonuria. Transient abnormalities which have been detected include tyrosyluria, generalized aminoaciduria, cystinuria, and glycosuria. However, 2 phenylketonuric infants failed to exrete a detectable quantity of o-hydroxyphenylacetic acid at the time of testing. The detection of this compound in urine is an unreliable method of screening for phenylketonuria. A method of blood chromatography will become the primary screening procedure for phenylketonuria in Wales during 1974. (11 refs.)

Department of Medicine University Hospital of Wales Heath Park Cardiff CF4 4XN, Wales

1090 THISTLETHWAITE, D.; DARLING, J.A.B.; FRASER, R.; MASON, P. A.; REES, L. H.; & *HARKNESS, R. A. Familial glucocorticoid deficiency. Studies of diagnosis and pathogenesis. *Archives of Disease in Childhood*, 50(4):291-297, 1975.

Two brothers presenting with clinical and biochemical signs of familial glucocorticoid deficiency (hereditary adrenocortical unresponsiveness) were tall and markedly pigmented. Both had intermittent hypoglycemia generally precipated by an infection, and both demonstrated a failure of adrenocortical response to adrenocorticotropic hormone (ACTH). The absence of electrolyte imbalance, even on a low sodium diet, and very high levels of ACTH in plasma confirmed the diagnosis. Both children exhibited high levels of deoxycorticosterone (DOC) and normal levels of other corticosteroids. The high levels of DOC may be related to the apparent persistence of a "fetal" type of adrenocortical steroid biosynthesis in these boys for 18 months or more. Treatment with cortisone acetate has been highly effective. Occurrence of the disease in the 2 brothers is consistent with the suggested sex-linked recessive model of inheritance. (46 refs.)

*Department of Pediatric Biochemistry Royal Hospital For Sick Children 1 Rillbank Crescent Edinburgh EH9 1LJ, Scotland

1091 BARNES, N. D. Serum TSH measurement in children with thyroid disorders. Archives of Disease in Childhood, 50(7):497-499, 1975.

Measurement of the serum thyroid-stimulating hormone, thyrotropin (TSH), is a useful aid in the diagnosis and management of all the major disorders of thyroid functioning. TSH is a glycoprotein hormone synthesized by the thyrotropin cells of the anterior pituitary. Primary hypothyroidism can be diagnosed by showing low levels of thyroid hormones in conjunction with high serum TSH levels. Serum TSH determination is valuable in adjusting thyroid hormone dosage in the growing child. A normal or low serum TSH in the presence of low levels of thyroid hormones and normal levels of binding proteins is indicative of secondary hypothyroidism. Assessing the serum TSH response to tripeptide-hypothalamic thyrotropin-releasing hormone (TRH) can often distinguish between hypothalamic disease with TRH deficiency and pituitary disease with TSH deficiency. In hyperthyroidism, the serum levels of the thyroid hormones are raised and the serum TSH is low. Measurement of TSH should be included in every pediatrician's diagnostic repertoire. (19 refs.)

Department of Paediatrics Addenbrooke's Hospital Hills Road Cambridge, England

1092 JACKSON, DOREEN; VANDER-SCHUEREN-LODEWEYCKX, MAGDA; & *GRANT, D. B. Thyrotrophin estimation in diagnosis and treatment of childhood thyroid disorders. Archives of Disease in Childhood, 50(7):522-525, 1975.

Serum thyroxine (T₄) and thyrotropin (TSH) findings in children with normal thyroid function and children being treated for thyroid abnormali-

ties confirm the value of TSH estimation in diagnosing hypothyroidism in childhood. Double antibody radioimmunoassay in normal Ss showed no apparent variation in TSH with age or sex and TSH levels of greater than 5µU/ml in only 5 children. TSH values were high in 9 Ss with primary hypothyroidism, 3 Ss with thyroiditis, and 1 S with a lingual thyroid. TSH values were moderately raised in 3 girls with thyroiditis, 2 brothers with goiters from enzyme defect, and a girl with an ectopic thyroid. Despite low T4 levels, TSH levels were normal in an S with iodine organification and 3 Ss with thyroxine binding globulin deficiency. Estimated TSH levels were slightly high in 3 out of 29 children being treated for hypothyroidism despite replacement therapy with L-thyroxine. Three weeks after treatment was temporarily stopped, 1 patient showed a very high TSH level. Thyroxine therapy may not always effect complete suppression of TSH secretion. (16 refs.)

Hospital for Sick Children Great Ormond Street London WC1N 31H, England

1093 KAUFMAN, S. Pterin admistration as a therapy for P.K.U. due to dihydropteridine-reductase deficiency? Lancet, 2(7938):767, 1975. (Letter)

Recent suggestions that pterin administration might be effective against phenylketonuria (PKU) that is due to dihydropteridine-reductase deficiency ignore some critical facts about tetrahydropterin and phenylalanine metabolism. This therapy would require, at a minimum, the administration of a dose of tetrahydropterin that is equal to the total quantity of phenylalanine that is hydroxylated per day, amounts much higher than those which have been recommended. There is also evidence that tetrahydropterin does not readily enter the brain. Tetrahydropterins are not inert substances, and they may not be innocuous. (4 refs.)

Laboratory of Neurochemistry National Institute of Mental Health Bethesda, Maryland 20014 1094 DANKS, D. M.; COTTON, R.G.H.; & SCHLESINGER, P. Tetrahydrobiopterin treatment of a variant form of phenyl-ketonuria. Lancet, 2(7943):1043, 1975. (Letter)

Four patients from 3 families with a variant of phenylketonuria in which cerebral degeneration progressed relentlessly despite dietary restriction of phenylalanine were seen, 1 of whom is alive and SMR at age 17 months. A low-phenylalanine diet introduced at age 7 weeks when serum-phenylalanine rose to 14mg/dl kept the serum level between 2 and 10mg/dl. The baby never seemed quite normally alert but showed near-normal motor development during the first 6 months, after which her development slowed down and convulsions developed and became frequent and difficult to control. Since that time her abilities have regressed rapidly. Her serum phenylalanine varies between 7 and 10mg/dl on a normal diet. The first child (female) of the S's parents, Italian-born first cousins, presented with MR at age 3 months and a serum phenylalanine of 25mg/dl; she deteriorated progressively despite dietary therapy and died at 4 years of age. Treatment trials with the present S, the third child in the family, have indicated that intravenous 5,6,7,8-tetrahydrobiopterin can function as cofactor to phenylalanine hydroxylase in vivo without any side effects. It remains to be determined whether similar correction of the defective function of tyrosine and tryptophan hydroxylases in the brain is achieved. (5 refs.)

Genetics Research Unit Royal Children's Hospital Research Foundation Melbourne 3052, Australia

1095 BARTHOLOME, K.; & BYRD, D. J. L-dopa and 5-hydroxytryptophan therapy in phenylketonuria with normal phenylalanine-hydroxylase activity. *Lancet*, 2(7943):1042-1043, 1975. (Letter)

Treatment which substitutes the missing substrates L-dopa and L-5-hydroxytryptophan has been used successfully for 9 months in a child with phenylketonuria and normal phenylalanine-hydroxylase activity. The child, who weighs 10kg, is receiving 150mg L-dopa, 40mg L-5-hydroxytryptophan, and 12.5mg carbidopa per day. The L-dopa dosage, lowered following an episode of vomiting and loss of weight, was made more

effective by combining it with carbidopa. The child has improved steadily on this therapy, which is currently administered at home. Mycolonus, uncontrolled movements, and tetraplegia have disappeared, as have greasy skin, hypersalivation, and recurrent hyperthermia. He is now able to control his head movements, turn over, and carry out intentional movements. (4 refs.)

Universitats-Kinderklinik 69 Heidelberg, Germany

1096 BEUTLER, E. Diagnosis of G.-6-P.D. deficiency. *Lancet*, 2(7943):1032-1033, 1975. (Letter)

The cumbersome tetrazolium-linked cytochemical method is probably the best available technique for establishing the diagnosis of G.-6-P.D. deficiency in females who have undergone hemolysis or in patients who have been transfused, but in untransfused males the centrifugation, based upon the selection of older, denser G.-6-P.D.-deficient cells from a mixed population in which the degree of deficiency is age-dependent, is particularly useful in males who have undergone recent hemolysis. The technique is wholly irrelevant for the detection of female heterozygotes, who possess, as do patients who have been transfused, a genetically distinct population of G.-6-P.D.-normal cells of all ages. (5 refs.)

City of Hope Medical Center 1500 E. Duarte Road Duarte, California 91010

1097 TOYO-OKA, TERUHIKO; HANAOKA, FUMIO; AKAOKA, IEO; & YAMADA, MASA-ATSU. X-linked hypoxanthine-guanine phosphoribosyltranferase deficiency without neurological disorders. A report of a family. Clinical Genetics, 7(3):181-185, 1975.

A boy in a family with hypoxanthine-guanine phosphoribosyltransferase (HGPRT) deficiency but without neurological disturbances presented with gout unaccompanied by behavioral or characterologic abnormalities. HGPRT activity as determined by thin layer chromatography and liquid scintillation counting was negligible (0.07 percent of the normal value), while adenine phosphoribosyltansferanse (APRT) activity was

high (210 percent of the normal value). Other family members showed slightly reduced HGPRT activity and normal APRT activity. Autoradiography of fibroblast cultures revealed no uptake of ³H-hypoxanthine in the patient, and typical mosaicism was shown in his mother and both sisters. The disorder appears to be inherited as an X-lined recessive trait on the basis of the facts that the patient is male and no females in the family showed any clinical symptoms or hyperuricemia, that pedigree studies were consistent with X-linked inheritance of the defect, and that the females in the family possessed 2 cell populations, one normal and the other HGPRT-deficient. (9 refs.)

Department of Pharmacology Faculty of Medicine University of Tokyo Hongo 7-3-1, Bunkyo-ku Tokyo, Japan

1098 DANIEL, P. M.; LOVE, E. R.; & PRATT, O. E. Hypothyroidism and aminoacid entry into brain and muscle. *Lancet*, 2(7940):872, 1975. (Letter)

The effect of lack of thyroid xormones on the transport of 3 essential amino acids into brain and muscle was demonstrated in a comparative study of the growth and development of day-old thyroidectomized and control Wistar rats. The thyroidectomized animals grew less well. Measurement of the influx of radioactively labeled L-leucine, L-valine, and L-lysine into brain and pectoralis muscle at age 12 weeks indicated that hypothyroidism reduced thhir influx. The rate of incorporation of L-leucine and L-valine into cerebral protein in the thyroidectomized rats was also reduced. The findings suggest the involvement of the thyroid hormones in facilitating amino acid transport into brain and muscle cells. (8 refs.)

Department of Neuropathology Institute of Psychiatry De Crespigny Park London SE5 8AF, England

1099 BUIST, NEIL R. M.; MURPHEY, WIL-LIAM F.; BRANDON, GATLIN R.; FOLEY, THOMAS P., JR.; & PENN, RHESA L. Neonatal screening for hypothyroidism. *Lancet*, 2(7940):872-873, 1975. (Letter)

Routine screening for hypothyroidism is being conducted as part of the Oregon Neonatal Metabolic Screening Programme. Blood specimens are taken from all babies within 24-96 hours of birth, and 90 percent of these infants are retested at 4-6 weeks of age. The filter-paper throidstimulating-hormone (TSH) assay is employed as a preliminary confirmation of the significance of an apparently low thyroxine (T₄) result. Through August, 1975, 11,326 newborn specimens and 9,903 4-6-week specimens had been tested. Of the low T4 values obtained in 113 newborn and 125 4-6-week specimens, 27 were low in T₄ in both specimens, and 3 of these 27 had abnormally high TSH on thh filter-paper assay; hypothyroidism was confirmed by additional tests. The obtained 1/3,000 incidence of hypothyroidism is higher than that anticipated from published data. The value of early screening, diagnosis, and subsequent treatment of the affected infants remains uncertain. (3 refs.)

Department of Pediatrics University of Oregon Health Sciences Center Portland, Oregon 97201

1100 FLEISHER, THOMAS A.; ISENBERG, J. NEVIN; & SHARP, HARVEY L. Leukocyte function in aspartylglucosaminuria. Journal of Pediatrics, 87(5):833, 1975. (Letter)

The hypothesis that the abnormality in lysosomal enzyme content in patients with aspartylglucosaminuria (AGU) leads to a secondary disturbance in the leukocyte functions related to the immunologic defense mechanism and causes recurrent and severe infections was examined through an evaluation of neutrophil and lymphocyte function in cells prepared from a 5-year-old girl with AGU. The leukocyte counts and differentials were within normal limits on all testings. Thus, despite the morphologic abnormalities noted in the lysosomes of leukocytes in AGU, no impairment in the immunologic functions of neutrophils or lymphocytes from the patient could be demonstrated. (3 refs.)

Gastroenterology Section, Department of Pediatrics University of Minnesota Minneapolis, Minnesota 55455 1101 AWRICH, ALAN E.; STACKHOUSE, W. JAMES; CANTRELL, JAMES E.; PATTERSON, JOSEPH H.; & RUDMAN, DANIEL. Hyperdibasicaminoaciduria, hyperammonemia, and growth retardation: treatment with arginine, lysine, and citrulline. Journal of Pediatrics, 87(5):731-738, 1975

A child referred for growth retardation, anorexia, and seizures and found to have hyperdibasicaminoaciduria has received effective long-term treatment for 4 years through appropriate amino acid supplements to her diet. The patient, a 9.5-yearold Negro girl, had clinical manifestations and abnormal laboratory data similar to those of affected individuals in previous reports. The physical findings of hyperelastic skin and hypermobile joints, resembling manifestations of type VI Ehlers-Danlos syndrome, have not been mentioned in previous reports. The patient was observed during 4 sequential 6-month periods of treatment (I), dietary supplement of arginine and lysine (II), dietary supplement of citrulline and lysine (III), and no treatment (IV). During Periods II and III, growth rate increased 3- to 4-fold, spontaneous protein intake increased 2- to 3-fold, and abnormalities in blood NH3 and the plasma aminogram were partially corrected. The citrulline plus lysine supplement was more beneficial than that of argninine plus lysine in most respects. The data of the present patient indicated that transport of arginine and lysine is impaired not only in the renal tubule but also in the small intestine. Amino acid analysis of random urine samples showed only lysinuria without argininuria or ornithinuria, but excessive argininuria and ornithinuria were seen when protein intake was increased to 40g daily or when the 10g protein diet was supplemented with arginine or citrulline. (21 refs.)

Department of Medicine Emory University School of Medicine Atlanta, Georgia

1102 LETTS, R. M.; & HOBSON, DOUGLAS A. Special devices as aids in the management of child self-mutilation in the Lesch-Nyhan syndrome. *Pediatrics*, 55(6):852-855, 1975.

Two educable siblings aged 14 and 11 years with the Lesch-Nyhan syndrome who were almost unmanageable due to extreme self-destructive impulses were given technical assistance through the auspices of a special devices clinic in order to improve their care and to ease the burden on family members and teachers. The older brother was attending school stretched out in a standard reclining wheelchair with his hands bound and tied to the arm rests. He tried compulsively to bite his hands. Head-banging and flexing his knees up to his chin and then flailing them out at passers-by or into door jambs were the primary unsolved problems of the younger brother, who was able to propel himself in a standard wheelchair. A custom chiar complete with a clear-plastic arm and hand enclosure was designed for the older boy, and a padded projection was built onto the anterior aspect of the wheelchair seat of the younger child. The technical adaptations have removed a tremendous load from the daily care of the boys and have made family outings and schooling easier. (8 refs.)

Section of Orthopaedics, Children's Centre 685 Bannatyne Avenue Winnipeg, Manitoba R3E 0W1, Canada

1103 GRAND, RICHARD J.; VAWTER, GOR-DON F. Juvenile Wilson disease: histologic and functional studies during penicillamine therapy. *Journal of Pediatrics*, 87(6,part 2):1161-1170, 1975.

Seven patients with Wilson disease were studied 2 to 7 years after the beginning of treatment with penicillamine to determine possible long-term effects on hepatic morphology. In 4 patients with initial biopsies, posttreatment examination showed either considerable reduction in portal fibrosis (2 patients) or no significant change (2 patients): substantial diminution or absence of portal inflammation and necrosis were observed in 3 patients. Complete restitution of normal architecture was not found in this group. In patients who lacked initial biopsies, portal cirrhosis, inflammation and necrosis, and fatty vacuolization of the hepatocytes were present 3, 5, and 7 years after treatment began. Lipofuscin pigment was abundant in follow-up biopsies. Morphological improvement does occur during penicillamine therapy, but further studies are needed to determine the relationships among hepatic copper levels, hepatic injury, and the potential for healing facilitated by the drug. (32 refs.)

300 Longwood Avenue Boston, Massachusetts 02115 1104 BERATIS, NICHOLAS G.; TURNER, BRYAN M.; & HIRSCHHORN, KURT. Fucosidosis: detection of the carrier state in peripheral blood leukocytes. *Journal of Pediatrics*, 87(6, part 2):1193-1198, 1975.

Alpha-L-fucosidase (a-L-fucosidase) activity was examined in white blood cells and serum of 21 members of a family in which 2 cases of fucosidosis had occurred and normal controls. Homozygote, heterozygote, and normal subjects were clearly delineated by activity in the lymphocytes revealed by a colorigenic substrate. No activity was detected in the patient's cells with the colorigenic substrate, but activity seemed to vary from 0.5 to 1.1 with a fluorogenic substrate. Activity in the lymphocytes of both the patient's parents, 2 grandparents, and 6 other potential carriers fell between the values of patients and normal subjects. Granulocytes showed the greatest variability in a-L-fucosidase activity of all types of white blood cells. Although activity of the enzyme in leukocytes of heterozygotes was generally lower than in normals, values were sometimes close or overlapping. The great variability of a-L-fucosidase activity in sera from normal subjects indicates that this system is not reliable for assessment of carrier status or even diagnosis of fucosidosis. (20 refs.)

Division of Medical Genetics Dept. of Pediatrics Mt. Sinai School of Medicine New York, New York

1105 MCKERAN, R. O.; ANDREWS, T. M.; HOWELL, A.; GIBBS, DOROTHY A.; CHINN, SUSAN; & WATTS, R.W.E. The diagnosis of the carrier state for the Lesch-Nyhan syndrome. Quarterly Journal of Medicine, 44:189-205, 1975.

Studies on the diagnosis of the carrier state in the Lesch-Nyhan syndrome are reported, with particular reference to an individual whose genotype proved difficult to establish. Although the subject was the mother of a classical case of the Lesch-Nyhan syndrome (subject 1), her skin fibroblast cultures consistently grew only cells containing hypoxanthine guanine phosphoribosyltransferase (HGPRT). Other evidence of mosaicism was sought by methods depending on the demonstration of clonal growth in hair follicles, cultured bone marrow cells, and phytohemagglutinin-stimulated lymphocytes and the possible

demonstration of enzyme levels intermediate between hemizygotes and normals in jejunal mucosa. Results were then compared with those obtained in individuals of known genotype. Results obtained on subject 7, the mother of subject 1, were judged compatible with a fresh point mutation of the structural gene which directed the synthesis of HGPRT in the son. This mutation could have arisen in the child or during oogenesis. (31 refs.)

Medical Research Council Clinical Research Centre Watford Road Harrow, Middlesex HA13UJ, England

1106 IKONNE, J. U.; RATTAZZI, M. D.; & DESNICK, R. J. Characterization of hex S, the major residual β hexosaminidase activity in type O G_{M2} gangliosidosis (Sandhoff-Jatzkewitz diease). American Journal of Human Genetics, 27(5):639-650, 1975.

The isolation and characterization of the major component of residual \(\beta \) hexosaminidase activity in type O G_{M2} gangliosidosis, designated hex S, is reported. Chromatography of tissue extracts on DEAE-cellulose resulted in the routine isolation of a component, designated hex S, from tissues and plasma of patients with type O GM2 gangliosidosis. Ion-exchange chromatography on DEAE-Sephadex resulted in the isolation and partial purification of a highly electronegative β hexosaminidase activity with hex C electrophoretic mobility. Under electrophoresis, hex C had a slightly greater anodal migration than had S at pH 7.0. Hex S and hex C had slightly higher apparent molecular weights than those of hex A or hex B; no major differences were found between hex S and hex A in thermostability, pH optimum, or kinetic properties. Hex S, like hex C from the placenta, reacted with an antiserum directed towards the unique antigenic determinant alpha of hex A, indicating that hex S, hex C, and hex A share a common antigenic determinant. No reactivity of hex S was detected with an antiserum directed toward the common antigenic determinant β of hex A and hex B. These results suggest that further biochemical and immunologic characterization of hex S and elucidation of its relationships with hex A, hex B, and hex C may

significantly contribute to the understanding of the molecular defects in the G_{M2} gangliosidoses. (37 refs.) (Author abstract modified)

Dight Institute for Human Genetics University of Minnesota Minneapolis, Minnesota 55455

1107 BEUTLER, ERNEST; KUHL, WANDA; & COMINGS, DAVID. Hexosaminidase isozyme in type O G_{M2} gangliosidosis (Sandhoff-Jatzkewitz disease). American Journal of Human Genetics, 27(5):628-638, 1975.

A new patient with type O G_{M_2} gangliosidosis (Sandhoff-Jatzkewitz disease) is reported, in whom the small amount of residual hexosaminidase (hex B) is more highly charged at neutral pH than is hex A. In agreement with a proposed model of hexosaminidase structure, it was demonstrated by immunologic means that this enzyme is composed, at least in part, of alpha subunits, and that it contains no beta subunits. Fibroblasts from the patient, a 20-month-old Mexican-American female, contained only 5µU of enzyme/mg protein, approximately 1.6 percent of mean normal. This enzyme is designated as hexosaminidase (hex) S; it reacts with antiserum prepared against homogeneous hex A but not with serum prepared against homogeneous hex B. Findings support the previously described model of the relationship between hex A and hex B, in which hex A has the structure $(\alpha\beta)_3$, while hex B is (β)₆. Type B G_{M2} gangliosidosis (Tay-Sachs disease) is the α-mutation, while type O G_M, gangliosidosis (Sandhoff-Jatzkewitz disease) is the β -mutation. (30 refs.)

Division of Medicine City of Hope Medical Center 1500 East Duarte Road Duarte, California 91010

1108 SNYDERMAN, SELMA E.; SANSARICQ, CLAUDE; PHANSALKAR, SADASHIV V.; SCHACHT, ROBERT G.; & NORTON, PATRICIA M. The therapy of hyperammonemia due to ornithine transcarbamylase deficiency in a male neonate. *Pediatrics*, 56(1):65-73, 1975.

Severe hyperammonemia in a male newborn infant with ornithine transcarbamylase deficiency was reduced by a series of exchange transfusions and a prolonged period of peritoneal dialysis and was controlled with dietary therapy. The ammonia level returned to normal 3 days after the final discontinuation of the dialysis, and the normal level persisted on a regime consisting of adequate caloric intake and a mixture of essential amino acids with an excess of aspartic acid and arginine and the maintenance of adequate hydration at all times. This regimen was successful in continually controlling the ammonia level, even though complications occurred which might lead to tissue catabolism and increased ammonia production. The nutritional approach employed was also compatible with growth, weight gain being adequate, in spite of numerous complications, until the onset of the final episode. Although the infant did not survive, his death was the result of an infectious complication, and ornithine transcarbamylase deficiency in the male should not be considered to be invariably fatal. (38 refs.)

Department of Pediatrics New York University Medical Center 550 First Avenue New York, New York 10016 1109 SAREEN, CHANDRA; RUVALCABA, R. H. A.; & KELLEY, V. C. Some aspects of carbohydrate metabolism in Prader-Willi syndrome. Journal of Mental Deficiency Research, 19, Part 2:113-119, 1975.

Three patients with Prader-Willi syndrome presented with chemical diabetes mellitus; all were hypersensitive to exogenous insulin and showed poor adrenal medullary response to hypoglycemics. The cardinal features of the Prader-Willi syndrome were present in each of the Ss, aged 17, 21, and 23 years old. Additionally, patient 1 had enamel hypoplasia, with caries of both primary and secondary dentition, and patient 2 had scoliosis in the thoraco-lumbar region. Patients 1 and 3 had fasting blood sugar values of 100mg percent, which then remained elevated thoughout the cortisone-glucose tolerance tests, and patient 2 had elevated blood sugar at various times during thh glucose and glucose cortisone tests. Overt diabetes was absent. All the patients became hypoglycemic with a standard dose and 50 percent of the standard dose of insulin. All Ss presented at one time or another with inadequate catecholamine responses, mainly reflecting poor or negative adrenalin or noradrenalin responses. The poor adrenal medullary response to the insulin injection may have been a contributing factor in the excessive hypoglycemic response, and the diabetes mellitus observed in the patients could have been due to inactivation of endogenous insulin. (27 refs.)

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MEDICAL ASPECTS — Etiologic Groupings Convulsive disorders

1110 BERGER, MARK L.; & *O'LEARY, JAMES L. Zinc distribution in mouse brain subsequent to hippocampal lesions. Archives of Neurology, 32(5):295-297, 1975.

When lesions are placed in the mouse hippocampal area, and the mice are subsequently injected with 1mg zinc lactate, the distribution of zinc in the pyriform-lateral amygdala-hippocampal cortex is observed to be altered. Eighty mice were examined, divided into 2 operative and 2 control groups. Unilateral lesions were placed in the

hippocampus or frontal lobe of the operative groups, and subcutanious injections of zinc lactate were administered daily for 10 days before intravenous injection of diphenylthiocarbazone in 1 control group and both lesion groups. More extensive staining of lateral amygdala and associated cortex on the side of the lesion was observed in hippocampal lesion mice. There was little difference between controls, indicating that the content of zinc in the hippocampal-lateral amygdalar region is not increased by its greater systemic availability. In this instance, increased

zinc uptake seems to be a local phenomenon. (8 refs.)

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1111 More about febrile convulsions. *British Medical Journal*, 1(5958):591-592, 1975. (Editorial)

In the absence of a better discrimination, a treatment policy for children with febrile convulsions should balance the established hazard of uncontrolled febrile convulsions against the disadvantages of prolonged and unnecessary treatment with drugs known to have unpleasant side effects. If convulsions are severe or prolonged they may be fatal or may cause permanent structural damage to the brain. Data from a hospital-based study indicate that boys with a positive family history of any form of seizure among first-degree relatives and girls in whom the first fit occurred before 19 months should be given prophylaxis against damaging seizures. Regular medication with phenobarbital or phenytoin can be administered for children whose first fit has been severe or has left a neurological deficit, and to those who have had 2 or more fits; for the child who has had only 1 brief fit, advice on tepid sponging and antipyretics is all that is needed. (20 refs.)

1112 ROSENTHAL, JOSEPH H.; NICHOLSON, ROBERT; & COLLIER, ELLA. The syndrome of Gilles de la Tourette. Journal of Learning Disabilities, 8(2):95-97, 1975.

Case reports of 3 children with the syndrome of Gilles de la Tourette indicate a subtle intertwining of organic and emotional variables which precludes a definitive choice of etiological concepts and of management. None of the 3 children had a definitive physical, neurological, or mental abnormality during infancy. A teacher was usually the first to draw attention to the abnormal manifestations (tics and abrupt vocal outbursts which may be coprolalic). Manifestations of the syndrome seem to be suspended during sleep and sometimes during physician-patient contact; they may be related to stimuli that induce anxiety. Emotional problems are associated with the syndrome. Two of the patients had neurological abnormalities, but they are not always present in patients with the syndrome. Many forms of treatment reflect the diversity of etiological concepts and the importance of interdisciplinary cooperation. (7 refs.)

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MEDICAL ASPECTS — Etiologic Groupings Chromosomal disorders

1113 SINGH, D. N.; OSBORNE, R. A.; HEN-NIGAR, G. R.; & BARNETT, C. D. Mosaic double aneuploidy of X and G chromosomes. American Journal of Mental Deficiency, 79(6):644-647, 1975.

A unique chromosome constitution was found in 3 cases having typical mongoloid features and few or no features of Turner's syndrome. Four distinct stem lines of 45,X/46,X,+G/46,XX,+G were present in the lymphocytes of 2 females. In the third case, the 45,X line was absent, and only 3 stem lines were observed. In each case the proportion of cell lines was different. Possible

mechanisms underlying these cases include the origination of the zygote from a normal egg and sperm to give the chromosome constitution of 46,XX and the nondisjunction of G in the early division of the zygote. An alternative explanation is that the zygote was conceived with typical Down's syndrome, and there was a possible random loss of X due to anaphase lag following the zygote formation. (7 refs.)

Diagnostic and Training Laboratory in Mental Retardation Meharry Medical College Nashville, TN 37208 1114 TSUANG, MING T.; MILLER, JON R.; & DEBAULT, LAWRENCE E. Klinefelter's syndrome and maternal XX/XXX mosaicism. Journal of Medical Genetics, 12(1):114, 1975. (Letter)

A rare case of a 46,XXY male is reported whose mother had a karyotype of 46,XX/47,XXX. Only 2 other cases of Klinefelter's syndrome with a trisomy mother are known. Theoretically half of the children of fertile 47,XXX females should be either 47,XXY males or 47,XXX females, but this genetic expectation has not been met. This may be due to preferential segregation in which the secondary oocyte containing XX polarizes during the disjunction process in meiosis I. In the present case, the etiology of both the extra X chromosome and Klinefelter's syndrome is unknown. Other than the mother's 46,XX/47,XXX, there is no outstanding history of illness in the family. (9 refs.)

Department of Psychiatry College of Medicine University of Iowa Iowa City, Iowa

1115 LINDENBAUM, R. H.; & BOBROW, M. Reciprocal translocations in man. 3:1 meiotic disjunction resulting in 47- or 45-chromosome offspring. Journal of Medical Genetics, 12(1):29-43, 1975.

Five cases of 3:1 disjunction from reciprocal translocations are documented, and data from 51 previously reported cases are reviewed. In 6 families, the translocation was traced through 5 generations, and in 13 families it was identified in 3 generations. Sixteen different chromosome complements are theoretically derivable by 3:1 disjunction from any given reciprocal translocation. Translocations involving G- and D-group chromosomes are found more often in families with 3:1 disjunction than in those identified mainly through unbalanced 46-chromosome propositi. Nearly all aneuploid individuals resulting from 3:1 disjunction are born to female heterozygotes. The recurrence risk is similar to that for translocations identified through an unbalanced propositus, but the abortion rate is higher in families with 3:1 disjunction. Factors which may predispose to 3:1 disjunction include involvement of an acrocentric chromosome, short interstitial segments, and extreme disparity in length of chromosomes involved. (146 refs.)

Department of Medical Genetics Old Road Headington, Oxford, England

1116 HOWARD, PATRICIA N.; STODDARD, GAYLE R.; GODDARD, MICHAEL W.; & SEELY, J. RODMAN. Giemsa banding of chromosome lqh+ and linkage analysis. Journal of Medical Genetics, 12(1):44-48, 1975.

A lqh+ chromosome transmitted through 4 generations was ascertained in a 6-year-old American Indian girl who was mildy dysmorphic and MR. The only consistent phenotypic relationship was concordance between synophrys and the Igh+ marker. The variant chromosome did not look uncoiled, and there was no evidence of translocation. Giemsa centromeric staining revealed an increased width of the heterochromatin commensurate with the increased length of the long arm. Two identical heterochromatin bands were shown in the centromeric region by Giemsa banding of the entire chromosome. Evidence for the locus being on chromosome Number 1 was consistent with the distribution of Duffy blood groups in the pedigree. (21 refs.)

Institute of Genetics University of Southern Mississippi Hattiesburg, Mississippi

1117 KARP, LAURENCE; BRYANT, J. I.; TAGATZ, GEORGE; GIBLETT, ELIOISE; & FIALKOW, PHILIP J. The occurrence of gonadal dysgenesis in association with monozygotic twinning. Journal of Medical Genetics, 12(1):70-78, 1975.

Although phenotypics and karyotypic concordance in monozygotic twin pairs is common in Down's and Klinefelter's syndromes, discordance often accompanies gonadal dysgenesis. In a newly reported monozygotic twin pair, discordant for phenotypic sex, the female had gonadal dysgenesis and chromosomal mosaicism. Mosaicism is frequently associated with gonadal dysgenesis in monozygotic twins. Findings in this case, in conjunction with previous reports, strengthen the

probability of a relationship between mosaicism and monozygotic twinning in gonadal dysgenesis. The association between monozygotic twinning and chromosomal mosaicism may not be unique to gonadal dysgenesis. (33 refs.)

Department of Obstetrics and Gynecology, Medicine and Genetics University of Washington Seattle, Washington

1118 WENT, L. N.; DE VRIES-DE MOL, E. C.; & VOLKER-DIEBEN, H. J. A family with apparently sex-linked optic atrophy. *Journal of Medical Genetics*, 12(1):94-98, 1975.

A probable new form of sex-linked optic atrophy characterized by very early onset, slow progression, and some additional neurological abnormalities was found in 8 members of 1 family. A close linkage between the optic atrophy and Xg genes was excluded by studies of the Xg blood group. Only males were affected. The presence of a sex-linked heterodegenerative neurological disorder accompanied by optic atrophy is suggested by the presence of neurological abnormalities (including absent ankle jerks, pathological plantar responses, tremor of the hands, and disturbances of gait) in some affected members. The appearance of Huntington's chorea in a side branch of the family is probably coincidental. (8 refs.)

Department of Human Genetics Faculty of Medicine University of Leiden Leiden, The Netherlands

1119 SHOKEIR, M. H. K.; RAY, M.; HAMER-TON, J. L.; BAUDER, F.; & O'BRIEN, H. Deletion of the short arm of chromosome No. 10. Journal of Medical Genetics, 12(1):99-103, 1975.

Partial deletion in the short arm of chromosome Number 10 may have been responsible for multiple anomalies observed in a male infant who died at the age of 3 months of overwhelming urinary infection with septicemic complications. Clinical features, which may represent a new clinically recognizable chromosomal syndrome, included cleft lip and palate, preauricular pits, low malpositioned auricles, antimongoloid eye slant,

microcephaly, micrognathia, congenital heart disease, hypertrophic pyloric stenosis, cryptorchidism, and abnormal dermatoglyphics. No chromosomal deletions were detected in the infant's parents and his older sibling. A terminal deletion with significant loss of genetic material could account for the substantial clinical abnormalities observed. (12 refs.)

Department of Genetics Health Sciences Centre Children's Centre 685 Bannatyne Avenue Winnipeg, Manitoba, R3E 0W1 Canada

1120 GARCIA, FE PALO; HSU, LILLIAN Y. F.; FOX, HOWARD; & GRIBETZ, DONALD. Trisomy 13 and Rubinstein-Taybi syndrome. *Journal of Medical Genetics*, 12(1):104-105, 1975.

Trisomy 13 syndrome was confirmed in an infant with a prominent nose and broad thumbs and first toes who was initially believed to have Rubinstein-Taybi syndrome. Cytogenetic studies were carried out because the patient had other anomalies, including low-set, malformed ears; antimongoloid slanting eyes; colobomata of the iris; and cleft palate. At least 5 known cases of trisomy 13 are associated with broad thumbs and first toes, suggesting that trisomy 13 may mimic the Rubinstein-Taybi syndrome. The possibility of trisomy 13 should be considered in all patients with clinical diagnosis of Rubinstein-Taybi syndrome. (3 refs.)

Department of Obstetrics and Gynecology University of Phillippines Medical School Phillipines

1121 MAGNELLI, NORMA C.; & THERMAN, EEVA. Partial 12p deletion: a cause for a mental retardation, multiple congenital abnormality syndrome. Journal of Medical Genetics, 12(1):105-108, 1975.

Banding techniques were used to verify a deletion of 12p in an SMR man with multiple congenital abnormalities. Major symptoms included short stature, microcephaly, antimongoloid slant of palpebral fissures, big ears with hyperplastic helices, imperfect dental enamel, short and

webbed neck, short arms and hands, brachymetaphalangy, short second fingers, broad thumbs, short metatarsal bones, and markedly large first toes. The lymphocytes of both parents and of a brother showed normal chromosomes. In the patient, 1 C-chromosome in all cells had a partially deleted short arm. This was identified as number 12. A number 22 (inherited from the mother) had an unusually bright short arm. The pattern of anomalies resembles that seen in another patient reported to have a short-arm deletion of an undetermined C chromosome. The problem of whether single chromosomal breaks are able to heal is posed by deletions not involved in recognizable translocations. (9 refs.)

Department of Medical Genetics University of Wisconsin Madison, Wisconsin 53706

1122 CRAPPER, DONALD R.; DALTON, ARTHUR J.; SKOPITZ, MACEY; SCOTT, JOHN W.; & HACHINSKI, VLADIMIR C. Alzheimer degneration in Down syndrome electrophysiologic alterations and histopathologic findings. Archives of Neurology, 32(9):618-623, 1975.

Alterations in the EEG and visual evoked potentials were recorded in a patient with pathologically verified mosaic Down syndrome and Alzheimer dengeration and in 20 surviving patients with Down syndrome, and these data were considered in relation to quantitative histopathologic findings. Progressive EEG disorganization and decreased voltage amplitude in the late components of the averaged visual evoked potentials were recorded in the last 2 years of life of the patient. Data are interpreted in light of a recent animal model of dementia. The animal model would predict that Alzheimer disease neurons with neurofibrillary degeneration do not generate postsynaptic potentials and therefore contribute to the loss of voltage generators that results in neuron death. Disfacilitation and disinhibition of surviving neurons may result from loss of voltage generators, along with the loss of normal rhythms. (26 refs.)

Department of Physiology Faculty of Medicine University of Toronto Toronto, Canada M5S-1A8 1123 CASSIDY, SUZANNE B.; MCGEE, BAR-BARA J.; VAN EYS, JAN; NANCE, WALTER E.; & *ENGEL, ERIC. Trisomy 8 syndrome. *Pediatrics*, 56(5):826-830, 1975.

Mild psychomotor retardation, bone and joint anomalies, and other visceral defects are among the common features of a distinct clinical syndrome characterized by a chromosome trisomy involving a number 8 member which has been authenticated in 17 patients. The trisomy 8 syndrome, which is more benign than other autosomal trisomies, allows patients to lead relatively normal lives; however, the severity or benignity of deformations may reflect the extent of euploid mosaicism (confirmed in 13 cases). A follow-up report of a child with number 8 trisomy/euploid mosaicism revealed that at age 6 he was well coordinated, alert, aware of his surroundings, and had an intelligence quotient of 73. Psychological assessment indicated that his intellectual performance was about 18 months behind CA; he had particular difficulties with memory, concentration, and visual-motor skills. Developmental milestones were normal, except for delayed and poorly articulated speech. Except for occasional temper outbursts, his disposition was good. (15 refs.)

*Department of Medicine Vanderbilt University School of Medicine Nashville, Tennessee 37232

1124 KARSH, RICHARD B.; KNAPP, RICHARD F.; NORA, JAMES J.; WOLFE, ROBERT R.; & ROBINSON, ARTHUR. Congenital heart disease in 49,XXXXY syndrome. *Pediatrics*, 56(3):462-464, 1975.

Reports of 2 new patients with 49,XXXXY syndrome with associated congenital heart disease (CHD) underline the importance of checking each child presenting with the syndrome for CHD. In 88 known cases of 49,XXXXY, the most frequent manifestations appeared to be marked psychomotor retardation, hypoplastic genitals, peculiar facies, clinodactyly, and radioulnar synostoses. However, CHD has been reported in 13 patients (14 percent). Of these, surgery was required in 4,

and 1 died in early infancy. Of 19 patients with certain or probable CHD, 7 had isolated or associated patent ductus arteriosus. (15 refs.)

University of Colorado Medical Center Denver, Colorado

1125 CENTERWALL, WILLARD R.; & BEAT-TY-DESANA, JEANNE W. The trisomy 9p syndrome. *Pediatrics*, 56(5):748-755, 1975.

Physical and mental growth retardation, downturned corners of the mouth, mildly globular nose, slightly wide-set and deepset eyes with anti-Mongoloid slant, and unusual dermatoglyphics were among the characteristics of 20 children identified as having the trisomy 9p syndrome. Most of the clinical characteristics observed in this syndrome are also seen in other trisomies involving more or less of the number 9 chromosomes, but the crucial determinants of this syndrome lie within the distal half of the number 9 short arm. The practical application of 4 types of chromosome banding identification (C, G, Q, and R) was demonstrated by a new case in which 9p14q translocation probably resulted from a spontaneous breakage and reciprocal exchange between a 9 and 14 chromosome during gametogenesis. The condition is familial is some cases, with early prenatal detection demonstrated in 1 case. Confirmation of the chromosomal aberration in the syndrome is dependent on the use of 1 or more special laboratory techniques. (34 refs.)

Department of Pediatrics Loma Linda University Medical Center Loma Linda, California 92354

1126 FINEMAN, ROBERT M.; ABLOW, RONALD C.; HOWARD, RUFUS O.; ALBRIGHT, JAMES; & BREG, W. ROY. Trisomy 8 mosaicism syndrome. *Pediatrics*, 56(5):762-767, 1975.

A report of an infant with trisomy 8 "mosaicism" syndrome (T8mS) adds 2 new physical findings (dense corneal clouding and a clavicular deformity) to the constellation of abnormalities associated with the highly lethal syndrome. Features which have previously been delineated include mild-to-moderate MR, strabismus, osseous and soft tissue

abnormalities, lowset and/or malformed ears, broad bulbous nose, palate deformity, various types of congenital cardiovascular disorders, hydronephrosis, cryptorchidism, and characteristic dermatoglyphics. Common features of the newly reported cases and 17 cases previously identified (supported by cytogenetic findings) indicate that T8mS is a distinct clinical entity represented by individuals whose chromosome complement is mosaic for chromosome 8. The distal portion of the long arm of chromosome 8 is responsible for most, if not all, of the clinical manifestations. Although etiology is unknown, mean ages of mothers (32) and fathers (33) of affected infants are higher than the mean parental ages in the general population. No family histories of the disorder have been reported. (26 refs.)

Department of Human Genetics Yale University School of Medicine New Haven, Connecticut 06510

1127 MORENO-FUENMAYOR, HUMBERTO; *ZACKAI, ELAINE H.; MELLMAN, WILLIAM J.; & ARONSON, MARGARET. Familial partial trisomy of the long arm of chromosome 10 (q24-26). *Pediatrics*, 56(5):756-761, 1975.

Further characterization of the clinical features of a syndrome associated with partial trisomy 10g resulted from identification of 2 fourth cousins with a strikingly similar pattern of malformation who have an unbalanced translocation (46, XY, -17, +t) (17p; 10q). The phenotypes of these patients and other reported cases with 10q trisomy suggests that the trisomy 10q 24-26 syndrome is characterized by: retarded growth; MR; a characteristic facies (microcephaly, flat face with spacious forehead, small nose, depressed nasal bridge, arched wide-spaced eyebrow, blepharophimosis, microphthalmia, low-set ears, bowshaped mouth with prominent upper lip, micrognathia); palate anomalies; congenital heart disease; and hand and foot anomalies. The cousins had common anomalies not observed in other patients with trisomy 10q which may be expressions of a partial monosomy of 17p. The prognosis of individuals with trisomy 10q is poor, with MR observed in all patients and early death not uncommon. (13 refs.)

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1128 PUCK, MARY; TENNES, KATHERINE; FRANKENBURG, WILLIAM; BRYANT, KATHLEEN; & ROBINSON, ARTHUR. Early childhood development of four boys with 47,XXY karyotype. Clinical Genetics, 7(1):8-20, 1975.

The first 4 boys in an epidemiological study involving voluntary long-term evaluation of infants identified at birth as having sex chromosome anomalies and close cooperation with their parents have been identified as having a 47,XXY karyotype. Parents were informed in general terms of their child's genetic defect and were offered continuing support and encouragement throughout the study. All 4 boys, who are well-proportioned and handsome in physical appearance, have been followed from birth for 6 to 9 years, with physical and psychological evaluations. Only minor physical deviations have been found. In these boys, there is no clear evidence that the extra X chromosome affects cognitive functioning. Two have average intelligence, 1 is below average, and 1 is above. Their shared minor deviations in motor, speech, and emotional development may be attributable to the 47,XXY karyotype. The cases reported here encompass a variety of socioeconomic conditions, distinct differences in parental ability to foster optimal development, and a wide range of familial intellectual achievement and educational levels. None of the boys suffered the handicap of parental rejection or displays the symptoms of such trauma, and a reasonably healthy developmental pattern has been secured. The findings suggest that an appropriate familial and environmental situation may minimize elevated risks due to a marked genetic defect. (21 refs.)

Department of Biophysics and Genetics University of Colorado Medica! Center 4200 East Ninth Avenue Denver, Colorado 80220 1129 REED, T.; & CHRISTIAN, JOE C.
Dermatoglyphics in Down's syndrome.
Clinical Genetics, 8(1):92-93, 1975. (Letter)

While Deckers' (1974) agreement with the comment of Reed (1974) that 15 percent of Down's syndrome patients had dermatoglyphic scores in the same range as controls using the "Radboud Score" was very welcome, his use of the same letter to extend employment of this diagnostic index into the overlap area without thorough consideration of the assumptions that must be made was distressing. The probability for scores in the overlap area is so dependent upon prior probability as to be virtually useless without an estimate of prior probability for the population being studied. The clinician does not have to accept the uncertainty of the dermatoglyphic score, but should be encouraged to do karyotyping to confirm or disprove a questionable diagnosis. (4

Department of Medical Genetics Indiana University School of Medicine Indianapolis, Indiana 46202

1130 IANCU, THEODORE. The "labial index" in Down's syndrome. *Clinical Genetics*, 8(1):81-84, 1975.

The finding of consistently shorter and wider labia majora in newborn females with Down's syndrome than in normals prompted the elaboration of a measurement which could express numerically the abnormal feature. The labial index (the ratio between the vertical and horizontal axes of the labia majora) was measured in 11 newborns with Down's syndrome and in 100 normal females of various birth weights. Seven of the mongoloids were of Jewish-Ashkenazy origin, 3 were of Jewish-Sephardic origin, and 1 was Arab. Only 8 of the 100 normal Ss had a labial index of less than 2.00, in contrast to the significantly lower labial index found in all 11 mongoloid newborns (mean 1.55). No phenotypic difference could be noted among the patients of various ethnic origins. (8 refs.)

2

Department of Pediatrics Sharon Hospital Petah Tikva, Israel 1131 LAUDER, I. J.; & MILNE, J. S. Bone mass in men with Klinefelter's syndrome and in normal subjects, estimated by the cortical thickness of bone. Clinical Genetics, 8(1):48-54, 1975.

Metacarpal cortical thickness was measured in an available sample of 51 47,XXY men and in 2 control samples of 46,XY men and 46,XX women in the age range 20-70. There were no detectable aging effects in the 20-50 age range in any group, but a significant diminution of cortical thickness with increasing age was present in the 40-70 age range in each group. In both the 20-39 and 40-70 age ranges, 47,XXY men resembled 46,XX females rather than 46,XY males with regard to cortical bone thickness. Low androgen output might explain the difference in cortical thickness between 46,XY and 47,XXY men. Moreover, the extra X chromosome in 47,XXY men may, in some unexplicable manner, produce bones resembling those of 46,XX women rather than 46,XY men. (16 refs.)

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1132 LEARY, P. M.; WEBB, P. M.; MELZER, C. W.; & CLOSE, H. G. Down's syndrome with additional XYY aneuploidy. Clinical Genetics, 8(1):55-58, 1975.

The fourth child of a 36-year-old mother and a 34-year-old father presented with XYY Down's syndrome. He had a round brachycephalic head, large, low-set ears, almond-shaped eyes with epicanthic folds, a small mouth, and hands that were squat but lacked well-defined simian creases. Allowing for his undoubted MR, he had a pleasant temperament. His genitalia were normally developed, and his height was well below the third percentile for his age. At approximately age 5, he presented with ample manual dexterity and showed considerable understanding of language, although he was unable to speak. The existence of 2 Y chromosomes was confirmed by the presence of 2 brightly fluorescent bodies in interphase nuclei of peripheral blood stained with quinacrine dihydrochloride. (11 refs.)

Department of Paediatrics and Child Health University of Cape Town Cape Town, South Africa

1133 COHEN, MAIMON M.; ROSENMANN, ADA; HACHAM-ZADEH, SHOSHANAH; & DAHAN, SARAH. Dicentric X-isochromosome (Xqi dic) and pericentric inversion of No. 2 [inv(2) (p15 q21)] in a patient with gonadal dysgenesis. Clinical Genetics, 8(1):11-17, 1975.

A 16-year-old girl, the seventh child of unrelated parents of Moroccan origin, had clinical manifestations compatible with the Turner's syndrome phenotype, but her karyotype possessed 2 distinct structural cytogenetic aberrations. G-banding analysis revealed that a No. 3-like chromosome was an isochromosome for the long arm of the X, and heterozygosity for a pericentric inversion of chromosome No. 2 [inv(2) (p15 q21)] was observed. C-banding clearly demonstrated 2 dark centromeric bands in the iso-X-chromosome, indicating that it was a dicentric element. Mosaicism was also present in the blood and skin fibroblasts. The karyotypes of the mother and 4 siblings of the proposita were normal, but the father and 2 brothers, who possessed a modal chromosome number of 46, were heterozygous for the pericentric inversion of No. 2. The dicentric element of the proposita was probably formed by a break in the proximal portion of the short arm with subsequent reunion and replication. (16 refs.)

Department of Human Genetics Hadassah-Hebrew University Medical Center Jerusalem, Israel

1134 GUSTAVSON, K.-H.; GAMSTORP, I.; & MEURLING, S. Bilateral teratoma of testis in two brothers with 47,XXY Klinefelter's syndrome. Clinical Genetics, 8(1):5-10, 1975.

Two brothers, the only children of unrelated, healthy parents with normal karyotypes, had 47,XXY Klinefelter's syndrome and were both operated on for bilateral benign testicular teratoma in infancy. The older child also had congenital hydrocephalus caused by congenital stenosis of the aqueduct of Sylvius. In these

patients, no line of cleavage between the tumor and the normal testicular tissue could be established, and bilateral orchidectomy was unavoidable. None of the previously reported teratomas in Klinefelter patients have been bilateral. (28 refs.)

Department of Paediatrics Unviersity Hospital S-750 14 Uppsala, Sweden

1135 RUNDLE, A. T.; ATKIN, J.; & SUDELL, B. Hepatitis associated antigen and the ABO locus in Down's syndrome. Clinical Genetics, 8(1):1-4, 1975.

Two hundred and twenty-seven Down's syndrome patients were studied for any increased frequency of blood group A over group O in individuals positive for the hepatitis associated antigen (HAA), such as that observed recently in blood donors. Seventy-one (31.3 percent) Down's syndrome patients were found to be positive for the antigen by hemagglutination, and 156 were negative for HAA. Comparison of the 2 groups failed to reveal any significant differences in blood group frequencies. (20 refs.)

Biochemistry Department St. Lawrence's Hospital Caterham, Surrey, England

1136 POON, C.C.S.; WONG, T.T.T.; CHAN, M.C.K.; & WONG, H. B. 11 pairs of ribs in E-trisomy. Archives of Disease in Childhood, 50(1):84, 1975.

Chest x-rays of 11 cases of E-trisomy indicated that there were 11 pairs of ribs present in 6 cases; thus the condition appears to be a common feature of this disorder. Although previous observations indicated that the ribs in E-trisomy are thin and hypoplastic, prescence of 11 pairs of ribs has not been previously documented. A recognized feature of Down's syndrome is also the presence of 11 pairs of ribs. (3 refs.)

Department of Pediatrics University of Singapore Sepoy Lines Singapore 3, Singapore 1137 RENNERT, OWEN M. Irradiation and radiation exposure. Clinical Obstetrics and Gynecology, 18(4):177-183, 1975.

Evidence indicates clearly that damage to the heterocyclic bases in deoxyribonucleic acid (DNA) is a major lesion resulting from irradiation. Additional targets for the induction of reproductive death by radiation may exist. The radiation sensitivity of mammalian cells with regard to the induction of mutation, malignant transformation, or cell death is a function of the cell cycle with respect to the time of radiation exposure. The radiosensitivity of mammalian cells is related to their proliferative capacity. Morphologic observation suggests that chromosome aberrations are induced as a consequence of radiation-induced killing of cells. The processes that lead from chemical lesions in DNA to the manifestations of chromosomal aberration remain to be identified. Exposure to ionizing radiation will produce chromosome aberrations and gene mutations in mammalian cells without causing reproductive death; the radiation exposure results in breakage of one or both chromatids, subsequently recognized as deletion rearrangements or translocations of chromosomal material. The increased transformation to malignant tissues following irradiation has been accomplished most recently in in-vitro systems. (15 refs.)

Department of Pediatrics University of Florida College of Medicine Gainesville, Florida

1138 MORTON, NEWTON E.; JACOBS, PATRICIA A.; FRACKIEWICZ, ANNA; LAW, PAMELA; & HILDITCH, C. JUDITH. The effect of structural aberrations of the chromosomes on reproductive fitness in man. I. Methodology. Clinical Genetics, 8(3):159-168, 1975.

Material on 192 pedigrees in which the proband had either a balanced or unbalanced structural rearrangement of the autosomes or an extreme variant easily recognized by orcein staining was analyzed by regression methods to establish a suitable methodology for determining the effect of the structural rearrangements and extreme variants on the reproductive fitness of their carriers. For each of 1,182 sibships in the 192 pedigrees, the method of ascertainment of the proband, type of

chromosome abnormality segregating in the family, and vital statistics for the cognate parent were recorded for use in the analysis. The evidence was divided into separate categories concerning fertility. survival, and generation time. Predictors of live births were defined by multiple regression on the basis of CA, sex, duration of marriage, and other relevant characteristics, but not including carrier status. A large sample of diverse chromosomal aberrations revealed significant effects on fertility, survival, and generation time and yielded a relative fitness of .769±.039. There was no significant shift in segregation frequency. (10 refs.)

Population Genetics Laboratory University of Hawaii Honolulu, Hawaii

1139 JACOBS, PATRICIA A.; FRACKIEWICZ, ANNA; LAW, PAMELA; HILDITCH, C. JUDITH; & MORTON, NEWTON E. The effect of structural aberrations of the chromosomes on reproductive fitness in man. II. Results. Clinical Genetics, 8(3):169-178, 1975.

Reproductive fitness was measured in 192 pedigrees subdivided into (1) D/D Robertsonian translocations ascertained through a euploid proband, (2) D/G Robertsonian translocations ascertained through a euploid proband, (3) reciprocal translocations ascertained through a euploid proband, (4) inversions ascertained through a euploid proband, and (5) all translocations and inversions ascertained through an aneuploid proband, (6) through a proband with a ring, marker, or supernumerary chromosome, or (7) through a proband with an extreme variant chromosome. Calculations were based on live births, fetal and infant deaths, and generation time of individuals carrying a chromosome abnormality or variant by comparison with first degree relatives who were known to have a normal chromosome constitution, as well as on the proportion of sporadic cases obtained from segregation analysis. The findings demonstrated an increase in fetal deaths to the carriers of both sexes of D/D Robertsonian translocations. When pedigrees ascertained through aneuploid carriers were considered, no demonstrable effect on fetal deaths was revealed, but there was a significant increase in deaths prior to age 18 in offspring of both male and female translocation and inversion carriers. (7 refs.)

Department of Anatomy and Reproductive Biology University of Hawaii Medical School 1960 East-West Road Honolulu, Hawaii 96822

1140 MULCAHY, MARIE T.; & JENKYN, JOY. The 9p trisomy syndrome: two further cases arising from different familial translocations. Clinical Genetics, 8(3):199-204, 1975.

Two cases of trisomy 9p involving separate sibships arose from different balanced translocations. Both cases were females, and in each pedigree the abnormality was of maternal origin. The karyotypes were 46, XX, t(8,9)(p23,p12) in the first case and 46,XX,t(9;21)(p13;q22) in the second. Marked differences were seen in the results of conception by the 2 translocation carrier mothers, there being an excess of carriers (all female) in 1 sibship and a preponderance of abnormal zygotes in the other. Cleft lip and palate was present in 1 of the cases as well as in an older female sibling who died at age 2.5 months. The second sibship appeared to be more severely affected than the first. Since the breakpoints in the No. 9 chromosome were very similar, the manifested variation in effect may have resulted from the involvement of different chromosomes in the translocations. Both girls had characteristic physical and dermatoglyphic findings. (4 refs.)

Cytogenetics Unit State Health Laboratory Services Box F312, G.P.O. Perth, Western Australia 6001

1141 VAN HEMEL, J. O.; VAN BIERVLIET, J. P.; & DE JAGER-VAN DER GRIFT, P. W. A girl with 46,XX,t(1;15) karyotype. Cytogenetic and clinical observations. Clinical Genetics, 8(3):213-217, 1975.

Routine chromosome analysis, tritium-thymidine autoradiography, and quinacrine mustard fluorescence studies were performed on a girl who presented with dwarfism and MR as well as an old-looking face, microcephaly, wide sutures, enlarged fontanelle, abundant hair with abnormal implantation over the head and forehead, bushy eyebrows, and long eyelashes. Clinical examination at age 6 revealed a normally proportioned, SMR

dwarf with mild hypertelorism, flattened occiput, hypernasal voice with insufficiency of the velum, cubiti valgi, pronounced clinodactyly in the fifth finger and bilateral membranous syndactyly of basal phalanx of second and third toes, and stiffness of all joints. Her bone age was 2 years. In all leukocyte metaphases of the patient, 46 chromosomes were counted. One D-group chromosome was abnormal, appearing as an early replicating element in all cells with the exception of a late replicating zone in the long arm of the presumed chromosome 15. One very late replicating X-chromosome was present in all metaphases, indicating a normal XX sex chromosome constitution in the girl. Fluorescence studies suggested a reciprocal (1p-;15q), de novo translocation. (7 refs.)

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1142 BLANK, C. E.; COLVER, DOREEN C. B.; POTTER, A. M.; MCHUGH, J.; & LORBER, J. Physical and mental defect of chromosomal origin in four individuals of the same family. Trisomy for the short arm of 9. Clinical Genetics, 7(4):261-273, 1975.

Four members of the same family were found to have the reciprocal translocation t(9:22)(q13:q11) segregating in genetically balanced and unbalanced form. The affected individuals--a 35-year-old woman, 2 female first cousin siblings aged 23 and 19 years, and a 7-year-old nephew-were all trisomic for the short arm of chromosome No. 9 (9p+) and trisomic for the proximal part of the long arm of 9. They were all severely subnormal and microcephalic, had coarse disproportionate facial features (particularly the 2 oldest), and exhibited phalangeal abnormality of all extremities, clinodactyly with shortening of the middle phalanx of the little fingers, and brachyphalangy and angulation of midphalangeal joints. All 4 had small and/or dysplastic toes and dystrophic toenails, and the 3 oldest had hallux valgus. All 4 were short, and the 3 oldest had kyphosis or kyphoscoliosis. One or more of the triradii at the base of the third, fourth, and fifth digits was

absent or in an unusual position in 1 or both hands. Severe retardation of bone age was noted in the 3 patients examined for it. (19 refs.)

Centre for Human Genetics 117 Manchester Road Sheffield S10 5DN, England

1143 YANAGISAWA, SATOSHI; & YOKO-YAMA, HIROSHI. Symptoms of Turner's syndrome and interstitial heterochromatin in i(Xq). Clinical Genetics, 7(4):299-303, 1975.

A 10-year-old girl referred with the main complaint of short stature presented with ''isochromosome'' X mosaicism, 45, X/46, X, i(Xq)/47, X, i(Xq), i(Xq). Giemsa staining revealed asymmetrical banding patterns for both arms of the extra metacentric chromosomes; 1 arm had a pattern similar to that of the long arm of a normal X chromosome, while the other arm had an unusual narrow extra band close to the centromere. Heterochromatin staining showed that the abnormal metacentric chromosomes had interstitial heterochromatic regions on each chromatid of 1 arm. The metacentric abnormal chromosome could be an isochromosome for the long arm of an X, but with an asymmetrical banding pattern due to chromosomal rearrangement. Alternatively, it could be a dicentric chromosome, or might have arisen through an inversion including a part of the centromeric region. The patient had some typical signs of Turner's syndrome (low hairline, shield chest, widely spaced nipples, and obesity, in addition to short stature). Her myopia was not an uncommon feature in Turner's syndrome, but the manifested optic nerve atrophy was very rare in this disorder. (12 refs.)

Department of Pediatrics Yamaguchi University School of Medicine Ube, Japan

1144 SCHWINGER, EBERHARD; MIK-KELSEN, MARGARETA; & NIESEN, MATHILDA. Familial balanced (7;11;21) translocation and Down's syndrome in two siblings. Clinical Genetics, 7(4):304-307, 1975.

A rearrangement between chromosome 7, 11, and 21 in a mother was inherited by 3 daughters, 1 of whom was normal, and 2 of whom had a supernumerary chromosome No. 21 resulting in Down's syndrome. The 2 affected girls had brachycephaly, epicanthus, hypertelorism, lowplaced dysplastic ears, and muscular hypotony; the younger one was developing slowly, while the elder was MR. The mother and phenotypically healthy daughter had normal dermatoglyphics. Dermatoglyphic abnormalities in the other 2 sibs involved axial triradii, ulnar loops, and bridge simian lines. The first child with Down's syndrome was born when the mother was only 21 years of age. Cytogenetic analysis of the first born could have shown the inherited translocation, and prenatal diagnosis could have been offered. (10 refs.)

Institut fur Gerichtsmedizin D 53 Bonn Stiftsplatz 12, West Germany

1145 JACOBSEN, PETREA; HOBOLTH, NIELS; & MIKKELSEN, MARGARETA. Trisomy 9p in a patient with a de novo 9/15 translocation. Clinical Genetics, 7(4):317-324, 1975.

A 9p+ syndrome was suggested in a female child by the presence of MR and facial dysmorphism with hypertelorism, enophthalmus, antimongoloid eye slant, epicanthus, downward slanting of the mouth, globular nose, malformed ears, a pterygium colli, stunted growth, short fingers, inwardly curved fifth fingers, and proximally placed thumbs. In this case, the extra chromosomal material was translocated to the long arm of a chromosome No. 15, forming a de novo 9/15 translocation. It seems likely that close to the secondary constriction, chromosome No. 9 has a weak point where breakage can occur more easily. When the position of chromosome 9 is close to the nucleolus in the meiotic cell, reunion with chromosome 15 may be facilitated if breakage has occurred. (14 refs.)

Cytogenetic Department Brejning Institute for Research in MR DK-7080 Borkop, Denmark 1146 EVANS, D.I.K. Acute myelofibrosis in children with Down's syndrome. Archives of Disease in Childhood, 50(6):458-462, 1975.

Of 25 children with idiopathic myelofibrosis studied, 4 had Down's syndrome. In 2 boys with Down's syndrome who developed acute myelofibrosis at the ages of 19 and 21 months, the disorder presented with anemia and splenomegaly. It was clinically similar to acute leukemia, but bone marrow histology showed a bizarre pattern with generalized fibrosis, markedly increased reticulin, large reticulum cells, and giant cells resembling megakaryocytes. Both children died within 11 months after diagnosis. Features of a third reported case (Hillman and Forrester, 1968) were similar. The increased incidence of acute myelofibrosis in children with Down's syndrome may reflect the instability of the hemopoietic system in this disease. Histological examination of the bone marrow may distinguish acute myelofibrosis from leukemia. (28 refs.)

Royal Manchester Children's Hospital Pendelbury, Manchester M27 1HA, England

1147 BIDDER, R. T.; BRYANT, G.; & *GRAY, O. P. Benefits to Down's syndrome children through training their mothers. Archives of Disease in Childhood, 50(5):383-386, 1975.

A 6-month program of training in behavior modification techniques and group counseling for mothers of children with Down's syndrome resulted in clear gains for both mothers and children. The 8 mothers who participated in the program gained skills and techniques for training and observing their children and more confidence in coping with the children than 8 mothers who received only routine help from a general practitioner and health visitor. Children of mothers in the training program showed significant differences over infants of control mothers in language development and performance on the Griffiths Scale and a trend toward more improvement on the personal-social scale. Only the locomotion score did not reflect greater improvement of children who received maternal training. Beneficial effects of training mothers of Down's syndrome children may be paralleled in children with other handicaps. (27 refs.)

*Department of Child Health Welsh National School of Medicine Health Park, Cardiff CF4 4XN, Wales

1148 HECHT, FREDERICK; BANNISTER, DAVID L.; & ENGEL, ERIC. Partial trisomy 15 (dup15q) syndrome and the need for precision in clinical cytogenetics. *Journal of Pediatrics*, 87(5):842-843, 1975. (Letter)

On the basis of the human cytogenetic evidence cited in an article, its title "A G-like trisomy" inaccurately described a 47, XY, + der(15),t(15;17)(q22;p13)mat. defective child born to a 46,XX,15,17, + rep(15;17)(q22;p13) woman. The report is of particular clinical value, because the patient very closely resembled another patient reported 3 years ago. The resemblance suggests the existence of a distinct MR/malformation syndrome due to dup15q. (4 refs.)

University of Oregon Health Sciences Center Portland, Oregon 97201

1149 BARTA, L.; KEMENY, P.; & REGOLY-MEREI, ANDREA. Simultaneous occurrence of diabetes, liver cirrhosis, and 47XX,21+/46,XX chromosomal pattern. Archives of Disease in Childhood, 50(7):573-574, 1975.

The coexistence of juvenile diabetes, growth failure, liver cirrhosis, and 47,XX,21+/46,XX chromosomal mosaicism in a young female patient is reported. In spite of the chromosomal abnormality, the girl showed no clinical signs of Down's syndrome except for subnormal growth and a susceptibility to respiratory infections. An autoimmune process was suggested by the immunoglobulin pattern. Treatment with prednisolone resulted in normal immunoglobulin level and liver function tests and improvement in liver histology. (7 refs.)

Department of Paediatrics Bokay Janos-utca H-1038 Budapest, Hungary 1150 CAMPION, E. C.; & *WANGEL, A. G. Australia antigen, autoantibodies and cell-mediated immune responses in patients with Down's syndrome. *Medical Journal of Australia*, 1(15):468-470, 1975.

Sixty-six patients with Down's syndrome were matched with 66 other MR residents of the same institution to study the prevalence of Australia (Au) antigen, autoantibodies, and impaired cellmediated responses. Antigen was detected in 3 of the Down's syndrome patients and none of the MRs in the other group. The much lower prevalence of Au antigen in these Down's syndrome patients than in previous studies may be due to good hygiene and state of nutrition or to the relatively high age at which these patients entered the institution (8 to 9 years). Although an association between antigen carriage and impaired cell-mediated responses in Down's syndrome patients was shown, the correlation was incomplete. It is unlikely, therefore, that defective cell-mediated immunity is solely responsible for development of the Au carrier state. (14 refs.)

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1151 BORGAONKAR, DIGAMBER S.; & BOLLING, DAVID R. International Registry of Abnormal Karyotypes. American Journal of Human Genetics, 27(4):561-562, 1975. (Letter)

A computerized registry of abnormal karyotypes has been established at Johns Hopkins University to facilitate access to data which are now in laboratory files. The international registry is organized in sections headed by entry numbers which correspond to a published catalog of chromosomal variants and aberrations. Data from the registry will be available for planning research; delineating isolated cases with rare chromosomal anomalies; and using cell lines with chromosomal rearrangements in regional gene assignments. It will be possible to obtain information readily on any abnormality from the registry and to sort by chromosome, type of abnormality, and location of the reporting laboratory. Computer printouts of the registry will be provided several times a year at cost. (3 refs.)

Division of Medical Genetics Johns Hopkins University Baltimore, Maryland 21205 1152 BUHLER, E. M. Evolution of X-chromosome inactivation. *Lancet*, 2(7943):1036, 1975. (Letter)

A proposed theory of sex-chromosome evolution based upon the 4-fold presence of segment a of the short arm of the human X chromosome (corresponding to Xp2 and part of Xp1) in the female may not be correct. Deletion of the short arm of the X chromosome not involving segment b (Xp11) apparently did not cause any clinical symptoms in a published case of mother and daughter. However, another case with a similar X short-arm deletion at band p11 was reported to show signs of Turner's syndrome, including primary amenorrhea, short stature, and webbing of the neck. (3 refs.)

Institute of Genetics Basle University Children's Hospital CH-4000 Basle, Switzerland

1153 HOAR, D. I. Phenotypic manifestations of ataxia-telangiectasia. Lancet, 2(7943):1048, 1975. (Letter)

Observations of enhanced chemical-mutagen sensitivity in cells from ataxia-telangiectasia (AT) patients, together with reports of radiation sensitivity in vivo and in vitro, suggest excessive cell death as the cause of many, if not all, of the phenotypic manifestations found in AT. The onset of symptoms in AT patients is progressive and occurs after birth. Inherent hypersensitivity to environmental mutagens, both natural and manmade, would have dire consequences, with individuals with the AT genotype under constant exposure to these mutagens progressively losing cells through the lethal action of such agents. Combined with the reduced plating efficiency characteristic of the cells of AT patients, mutagen sensitivity could cause excessive cell death following exposure to environmental mutagens. (9 refs.)

Department of Medical Genetics University of Toronto Medical Sciences Building Toronto, Ontario M5S 1A8, Canada

1154 ALLER, V.; ABRISQUETA, J. A.; PEREZ, A.; MARTIN, M. A.; GODAY, C.; & DEL MAZO, J. A case of trisomy 8 mosaicism 47,XX,+8/46,XX. Clinical Genetics, 7(3):232-237, 1975.

Mosaicism of the type 47, XX, +8/46, XX was confirmed in the karyotype of a 4-month-old female with multiple malformations. Clinical findings were short stature, left palpebral ptosis, a broadened and upturned nose, hypertelorism, and low-set ears. There was congenital cardiopathy, left hydronephrosis, and megaureter. Laboratory study revealed deep skin furrows in the palms and soles. Chromosome preparations were made from peripheral leukocyte cultures. Of the 200 metaphases counted, 169 contained 47 chromosomes, and 27 were normal. The first type of cell always showed an extra chromosome belonging to the C-group, while the latter had 46 chromosomes with no additions. Only 1 Barr body was present in Giemsa-stained buccal mucosa cells. The presence of a triple-8 chromosome was confirmed from comparative study of curves obtained by photodensitometry; fluorescence banding yielded further confirmation of trisomy 8. The results obtained by using G-banding and confirmed by fluorescence analysis indicated a similar banding pattern in the 3 chromosomes 8. (13 refs.)

Centro de Investigaciones Biologicas Instituto de Genetica y Antropologia Velazquez, 144 Madrid-6, Spain

1155 FRIED, K.; ROSENBLATT, M.; MUNDEL, G.; & KRIKLER, R. Ring chromosome 13 syndrome. Clinical Genetics, 7(3):203-208, 1975.

Ring chromosome 13 was identified by the banding technique in a girl with MR and multiple malformations born in Russia after a full-term pregnancy and normal delivery to unrelated Ashkenazi lewish parents (the father and mother were 39 and 35 years of age, respectively, at the time of the birth). There was no evidence of familial hereditary disease, MR, or malformation. Craniotomy was performed at age 18 months because of premature closure of the metopic sutures. At 4.5 years of age, a short time after emigrating to Israel, the proband presented with MR, microcephaly, and many minor malformations, including asymmetrical mongoloid slanting of narrow palpebral fissures, bilateral epicanthic folds, broad and prominent nasal bridge, and short

neck. Minor dermatoglyphic abnormalities were also noted. X-rays showed a short middle phalanx on the second and fifth fingers of the left hand. (14 refs.)

University Department of Genetics Asaf Harofe Government Hospital Zerifin, Israel

1156 FRIED, K.; ROSENBLATT, M.; MUN-DEL, G.; & KRIKLER, R. Mental retardation and congenital malformations associated with a ring chromosome 6. Clinical Genetics, 7(3):192-196, 1975.

The only child of healthy, unrelated lewish parents (CA 27 and 24 years, respectively, for the father and mother at the time of his birth) was identified as having a ring chromosome 6 associated with congenital malformations. The boy was moderately MR at age 2.5 years and had an odd facies, marked by small head, bilateral epicanthus, broad nasal bridge, low-set prominent ears, and short neck. The thumbs were clasped much of the time. He experienced great difficulty in eating solid food and had a strange voice, despite normal mouth, tongue, palate, and pharynx. The Acetic/Saline/Giemsa technique identified a few apparently normal cells among the large majority with a ring chromosome. The relatively minor malformations and moderate MR as well as the finding that the circumference of the ring chromosome 6 was not much less than the total length of an ordinary chromosome 6 and that all bands seemed to be present in the ring chromosome suggested that the amount of genetic material lost must be small. (15 refs.)

University Department of Genetics Asaf Harofe Government Hospital Zerifin, Israel

1157 ORYE, E.; VERHAAREN, H.; VAN EGMOND, H.; & DEVLOO-BLANC-QUAERT, A. A new case of the trisomy 9p syndrome. Report of a patient with unusual chromosome findings (46,XX/47,XX,+i(9p)) and a peculiar congenital heart defect. Clinical Genetics, 7(2):134-143, 1975.

A girl with a peculiar congenital heart defect had an isochromosomal aberration of the short arm of chromosome 9. She presented with the typical major clinical features of the trisomy 9p syndrome: psychomotor retardation, microcephaly and brachycephaly, enophthalmos, antimongoloid eye slant, hypertelorism, abnormal ears, a globulous nose, downward slanting mouth, hypoplasia of phalanges, and abnormal palmar creases. She also had an incomplete harelip, a cleft palate, and a ventricular septadefect with pulmonary valve stenosis and a marked hypoplasia of the pulmonary trunk, including the bifurcation. The congenital heart defect was probably related to the exceptional chromosomal findings. Tetrasomy with mosaicism was found, with the abnormal chromosome being an isochromosome of the short arm with only a small Giemsa-11 positive centromere region. Only abnormal cells were found in the peripheral blood preparations, while normal and abnormal mitoses were seen in a skin biopsy culture. (22 refs.)

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1158 COHEN, MAIMON M.; DAVIDSON, RONALD G.; & BROWN, JUDITH A. A familial F/G translocation [t(20p-;22q+)] observed in three generations. Clinical Genetics, 7(2):120-127, 1975.

A female child and her paternal first cousin, a male, were found to be partially trisomic for the short arm of chromosome No. 20, due to the presence of a translocated chromosome inherited from their respective fathers [46, XX, t(20p-;22q+)pat] [46,XY,t(20p-;22q+)pat]. Both children manifested peculiar facial features: low-set ears, strabismus, and micrognathia. (One child also presented with a somewhat elongated philtrum and a small beaked nose and open mouth, while the other child had epicanthal folds.) They also had widely spaced nipples and proximally displaced thumbs and were MR. The clinical similarity of the 2 children indicated malformations and SMR due to the chromosomal aberration. Their fathers and 6 other relatives on the paternal side were presumably "balanced" carriers of the translocation. Although none of these relatives has any known physical defects or resembles the 2 cousins, a paternal uncle is mildly to moderately MR, a cousin who died at age 5 years of an unknown cause was reported to have been spastic, MR, to have had bilateral simian creases, and to have looked like one of the present cases, and his brother had multiple anomalies, respiratory distress, and died at 8 years of age. (10 refs.)

Department of Human Genetics Medical Center Hadassah-Hebrew University Jerusalem, Israel

1159 CENTERWALL, WILLARD R.; & MER-RELL, PRESTON R. Familial D/D translocation t(13q;14q). Eight members in 4 generations. Clinical Genetics, 7(2):91-97, 1975.

Eight family members spanning 4 generations were found to have 45 chromosome count D/D translocation identified by Giemsa-trypsin banding as t(13q;14q). This aberration was passed along in a Mendelian dominant fashion, with all involved parties except the index case (a young female) being asymptomatic and normal in appearance. The index case was born about 3 weeks early following labor, delivery, and pregnancy that were uneventful with the exception of salicylate and antihistamine ingestion in early pregnancy and an influenza-like illness in late pregnancy. Her birth weight was 3kg. There were 2 normal older siblings, a boy and a girl. Early developmental milestones for the S were borderline slow, and testing placed her in the borderline MR range. She had a borderline small head and a round, fat-cheeked, somewhat unusual facies with small features and confluence or synophrys of the eyebrows across the midline. The fingertips were slightly tapered and pink-colored. At 3 and two-thirds years of age she is 94cm high, weighs 14kg, and has an estimated developmental age of 22 months. Although her unusual appearance and physical and mental retardation made her a likely candidate for chromosome analysis, these characteristics were presumed to be coincidental to the D/D translocation. (14 refs.)

Genetics and Chromosome Services Loma Linda University Medical Center Loma Linda, California 92354 1160 MARKENSON, ALICEJANE LIPPNER; HILGARTNER, MARGARET W.; & MILLER, DENIS R. Transient thrombocytopenia in 18-trisomy. Journal of Pediatrics, 87(5):834-835, 1975. (Letter)

Multiple skeletal abnormalities without radial aplasia and with transient thrombocytopenia were noted in an infant with 18-trisomy. Multiple anomalies suggestive of 18-trisomy were noted at birth, including a weak cry, small face, prominent occiput, asymmetric palpebral fissures, low-set ears, microphthalmus, short sternum, shallow respirations, systolic murmur, single umbilical artery, prominent clitoris, broad hands, flexion deformities of both index fingers, abnormal abduction of hips, left rockerbottom foot, incomplete Moro reflex, and petechiae. Cytogenetic study on peripheral blood confirmed Edwards syndrome, with 47, XX + 18. Roentgenologic studies revealed normal radii. The initial platelet count was 35,000/mm³; repeat platelet counts were 29,000/mm3 at day 1, 90,000 at day 9, and 318,000 at 3 weeks of age. Bone marrow aspiration from the right anterior tibia at age 14 days revealed absent megakaryocytes; bone marrow biopsy from the right posterior iliac crest showed some megakaryocytes, relatively smooth and agranular in appearance. This case illustrates that thrombocytopenia occurring with 18-trisomy may be transient. However, the patient was lost to follow-up. The significance of the association of congenital hypoplastic thrombocytopenia with absent radii is unclear. (5 refs.)

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.1161 ALVESALO, LASSI; OSBORNE, RICH-ARD H.; & KARI, MARKKU. The 47,XYY male, Y chromosome, and tooth size. American Journal of Human Genetics, 27(1):53-61, 1975.

Permanent teeth of 12 individuals with a 47,XYY chromosome constitution were larger than those of control males and females, with differences significant in 11 comparisons. This suggests that factor (or factors) which influences excess growth of 47,XYY males may be in effect during prenatal life but is undoubtedly present very early in the postnatal period. A relatively short time period is

required for the achievement of final excess growth, probably only from 2½ to 3½ years in the case of first permanent molars. If the Y chromosome carries genes affecting tooth size in normal males, the gene products of the extra Y chromosome may have caused the observed size differences. The basic role in the Y chromosome in dental growth may be to promote the cells to exercise more mitotic divisions within the developing tooth germ. (16 refs.)

Institute of Dentistry University of Turku Turku, Finland

1162 BAXTER, R. G.; LARKINS, R. G.; MARTIN, F.I.R.; HEYMA, PAULA; MYLES, KATHLEEN; & RYAN, LYNNE. Down syndrome and thyroid function in adults. *Lancet*, 2(7939):794-796, 1975.

Thyroid function was assessed in 11 middle-aged and elderly patients with proven Down's syndrome. In contrast to previous reports, an exceptionally high frequency of overt thyroid disease was revealed. Six of the 11 patients had definite hypothyroidism, and 1 was thyrotoxic. The findings suggest that the thyroid autoantibodies, known to be present in a high proportion of children with Down's syndrome, are associated with a greatly increased frequency of thyroid dysfunction as patients age. The diagnosis of thyroid disease, particularly hypothyroidism, may be difficult to make on clinical evidence alone because of the associated features of Down's syndrome. (30 refs.)

Queen Elizabeth Geriatric Centre Ballarat, Victoria, Australia

1163 PARDO-MINDAN, F. J.; TORCAL, F. VARGAS; JULIAN, G. GARCIA; & RUIZ, M. T. VIRTO. Familial cryptorchidism. Pediatrics, 56(4):616, 1975. (Letter)

Cryptorchidism was seen in 2 families with family history of the condition and in 2-year-old twin brothers in a third family. In the first family, the father, his twin 3-year-old sons, and their 6-year-old sibling had undescended left testes. In the second family, left-sided cryptorchidism occurred in the father, his brother, and his

7-year-old son. The twins in the third family had cryptorchidism on the left side. The testes were located in the inguinal canal in all cases. Study of the first 2 families suggested that the trait for cryptorchidism can be inherited as a dominant autosomal character or transmitted by the Y chromosome. (3 refs.)

Department of Pathology Cuidad Sanitaria Jose Antonio Zargoza, Spain

1164 BENTLEY, DONALD. A case of Down's syndrome complicated by retinoblastoma and celiac disease. *Pediatrics*, 56(1):131-133, 1975.

The unique combination of Down's syndrome, retinoblastoma, and celiac disease was seen in a male mongoloid. The right eye was enucleated at age 2 for a suspected tumor, confirmed pathologically as a retinoblastoma endophytum with scattered seedling deposits. There has been no recurrence in the remaining eye. Symptoms consistent with the diagnosis of celiac disease appeared at age 14. There was no maternal family history of any known gastrointestinal or respiratory disease; paternal family history was unknown. Because of steatorrhea and a poor weight record, investigations for malabsorption were initiated. A jejunal biopsy specimen indicated plasma cell infiltration and grossly atrophied mucosal villi. On an attempted gluten-free regime, the patient's weight rose by 4.52kg in 6 months and 5.42kg in 12 months to 28.92kg at age 15.5 years (under the third percentile). In addition to having the classical features of mongolism, trisomy 21-22 was confirmed by leukocyte culture. Routine screening of the urine for amino acids also revealed raised levels of beta-aminoisobutyric acid. The patient represents the first case reported of Down's syndrome and celiac disease and the fifth case in the literature of Down's syndrome with retinoblastoma. (17 refs.)

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1165 LEVIN, STANLEY; NIN, ERGA; & MOGILNER, BENJAMIN M. T system immune-deficiency in Down's syndrome. Pediatrics, 56(1):123-126, 1975. The thymus-dependent immune system (T system) was studied in 14 children with Down's syndrome, including 5 newborns. In all cases in which chromosomes were examined, trisomy 21 was found. Normal newborn infants (cord blood) and children without Down's syndrome, as well as children with recurrent respiratory infections, were used as controls. The anti-fetal-thymocyte serum employed had been found previously to be suitable following appropriate adsorptions and seemed highly specific when tested against patients with known T cell deficiencies and B cell deficiencies, as well as aginst human thymocytes. In all Down's syndrome patients, the T cell population was only 60 percent of that in normal children (p<.001). No difference was found between newborns and older children in the nonmongol and mongol populations. Together with clinically observed diminished delayed hypersensitivity reactions, the decreased T cell population in experimental Ss could explain their increased rate of infections. However, the type of infections seen is not the usual type found in grossly T deficient children with thymic aplasia but rather resembles the common bacterial and viral respiratory infections, possibly because sufficient T cells are available to prevent the former infections. The deficient T cells in mongolism may be those necessary for the immunity of the respiratory system. (16 refs.)

Department of Pediatric Research Kaplan Hospital Rehovot, Israel

1166 LATTIMER, JOHN K.; SMITH, ARTHUR M.; DOUGHERTY, LOUIS J.; & BECK, LEAH. Dr. Lattimer and colleagues reply. Pediatrics, 56(1):151, 1975. (Letter)

Whether the scrotum is empty because of a mechanical block to testis descent or because of excessive cremasteric activity, it seems reasonable to offer the child some form of help to stabilize his body image and to establish that he is not different from other boys. The performance of elective testicular surgery is contraindicated for the very young child more on emotional than on physical grounds. However, the operation certainly should not be deferred beyond 7 years of age, since the development of germinal epithelium might be "stunted" after that. This approach is an empiric one, based more upon impressions gleaned

from years of clinical experience than on precisely defined experimental investigation. No pattern of untoward growth or neoplastic effects has resulted from the use of human gonadotrophin in similar dosage ranges for many years. In the absence of concrete adverse data regarding this approach and the use of a 3-injection regimen over the years, the attempt to treat the whole child rather than merely his testicles should continue. (2 refs.)

Columbia University College of Physicians and Surgeons 620 West 168th Street New York, New York 10032

*HURLEY, JOHN K.; & **MARTIN, LESTER W. More critical comments on therapy of cryptorchidism; a plea for facts, not opinions. *Pediatrics*, 56(1):150-151, 1975. (Letters)

Some of the opinions expressed by J. K. Lattimer et al. in "The Optimum Time to Operate for Cryptorchidism" (53:96, 1974) are open to serious question. Lattimer and colleagues have added to the existing confusion surrounding cryptorchidism therapy by stating categorically that age 5 or 6 years is a therapeutic deadline for bringing cryptorchid testes down into the scrotum, whereas the evidence shows clearly that the cryptorchid testis does not differ from its scrotal mate up to age 9. Lattimer et al. indicate the value of saving undescended testes because of their unimpaired capacity for secreting testosterone, regardless of their capability for producing sperm; however, since the Leydig cells of cryptorchid testes continue to produce testosterone in their aberrant location, orchiopexy cannot be justified on the grounds of salvaging endocrine function. Finally, in view of the absence of long-term follow-up information on the effects of introducing exogenous hormones into the prepubertal child, treatment of migratory testes with hormone injections would appear unwise. (5 refs.)

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**University of Cincinnati Cincinnati, Ohio 1168 MARSHALL, DONALD G. "The optimum time to operate for cryptorchidism." Pediatrics, 56(1):150, 1975. (Letter)

The article by J. K. Lattimer et al. on therapy of cryptorchidism (53:96, 1974) contains many unjustified proposals and erroneous statements. Gonadotrophin therapy for a badly underdeveloped scrotum in the form of a total of 18 injections in a child between 4 and 5 years of age is expensive, psychologically harmful, and totally unnecessary from the medical point of view. Absolutely no treatment is necessary in the migratory or retractile testis, and the use of anterior-pituitary-like hormone in a situation like this is a gross error of judgment. The authors point out that many testes come down in the first year of life, but a testis that is not down by 4 months will rarely descend spontaneously. Finally, a silicon gel-filled prosthesis is definitely hazardous. (2 refs.)

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1169 GUYDA, H. Critical comments on Lattimer et al.'s article. Pediatrics, 56(1):149-150, 1975. (Letter)

The recent article "The Optimum Time to Operate for Cryptorchidism" by J. K. Lattimer et al. (53:96, 1974) is a disturbing and strange combination of urologic and psychological opinion. While the need to diagnose and treat true bilateral cryptorchid testes is well documented, advocacy of the use of chorionic gonadotropins for both true cryptorchid (unilateral as well as bilateral) and migratory testes between the fourth and fifth birthdays, with subsequent surgery carried out forthwith to preserve body image, appears to be completely unsubstantiated by documented scientific evidence. Moreover, there is a total lack of any contrary statements regarding the potential harm that might ensue during and following surgery on a perfectly normal but retractile testis. Such therapy for retractile testes that can be brought down into the scrotum with careful clinical technique is unwarranted, and the creation of an artificial situation of abnormality whereby parents are instructed to return for additional hormone injections for retractile testes as required to "keep it down" is unjustified and physiologically unsound. Finally, a unilateral, undescended, particularly a retractile testis creates uncertainty regarding a young child's ability to control the testes only if reinforced by misplaced medical emphasis. A sound physiological and biological explanation of the fact would be much more beneficial and comforting. (3 refs.)

Department of Endocrinology Montreal Children's Hospital 200 Tupper Street Montreal 108, Quebec, Canada

1170 SINSON, JANICE C.; & WETHERICK, N. E. The nature of the colour retention deficit in Down's syndrome. *Journal of Mental Deficiency Research*, 19, Part 2:97-100, 1975.

Previous studies of a deficit in short-term retention of Munsell color information in a group of 84 Down's syndrome children using good daylight illumination were repeated with a group of 51 Down's syndrome children using blue weak artifical light (Osram 3050k). The incidence of error shown by the first group of Ss on Munsell green, red, and purple was reduced greatly with the second group of Ss, but errors were not reduced in Munsell colors resembling standard turquoise, blue, olive-green, and brown. Down's syndrome Ss tested in daylight did not show any tendency to confuse particular colors with each other, although they did show a much higher overall error rate than matched Ss not suffering from Down's syndrome. Overall, among Ss tested in artificial light, green, red, and purple were not confused with each other or with any other color, whereas turquoise, blue, olive-green, and brown were confused both with each other and with the other colors. The withdrawal of blue from the incident light seems to have enabled Ss to retain a more accurate impression of green, red, and purple without affecting the other colors at all. In practice, maximum advantage should be taken of the fact that Down's syndrome children may perform better in (blue weak) artificial illumination than in daylight. (2 refs.)

City of Leeds Society for Mentally Handicapped Children Mencap House 142 Chapeltown Road Leeds 7, England 1171 MILOSEVIC, JOVANKA; & KALICANIN, P. Long arm deletion of chromosome No. 6 in a mentally retarded boy with multiple physical malformations. *Journal of Mental Deficiency Research*, 19, Part 2:139-144, 1975.

Cytogenetic analysis by the method of heat Giemsa staining confirmed a partial monosomy for the long arm of chromosome No. 6 with the cytogenetic formula 46, XY, del(6) (q2) in the case of an SMR boy with extensive physical abnormalities. Chromosomal analyses indicated normal karyotypes in the parents. Physical malformations of the S included microcephaly, mongoloid slant of the palpebral fissures, large low-set and abnormally shaped ears, fish-like lips, broad and low palate, microretrognathia, short neck, marked clinodactyly, small penis, limited abduction of the hips on both sides, and divarication of the recti abdominis, umbilical hernia, and right inguinal hernia. The severe degree of psychomotor retardation and the serious multiple physical deformities with relatively small loss of chromosomal material could be explained in part by the fact that the human organism is far more sensitive to the loss than to a surplus of chromosomal material. (12 refs.)

Institute for Mental Health Palmoticeva 37 Belgrade, Yugoslavia

1172 WURSTER-HILL, DORIS H.; & HOEF-NAGEL, D. Banding identification of chromosomal abnormalities in four patients: ring (6), translocation (2q-;15q+), translocation (21q;21q) and deletion (22q-). *Journal of Mental Deficiency Research*, 19, Part 2:145-150, 1975.

Four children with MR and different chromosomal errors, previously reported, were restudied with the trypsin-Giemsa banding technique. In the case of a propositus for whom earlier findings had shown all modal cells from blood cultures to contain a ring chromosome, repeated banding identification indicated one entirely normal, 46,XY cell; in addition, two cells had 2 No. 6 chromosomes, both of which had extra material on the short arm or were stretched, but neither of which was a ring. The banding pattern of the ring indicated that it was a No. 6 chromosome and that only a minute portion of the chromosome, if any at all, was deleted in the formation of the ring. The earlier finding of a 2;15 translocation in one of two dizygotic twins with profound MR was shown to be correct; the long arm of No. 2 distal to band q22 had been translocated to the long arm of No. 15 with only minute resulting deletion. A Down's syndrome subject found earlier to have a modal chromosome number of 46 with a G/G translocation in all blood cells indicated the expected t(21g;21g) in all 24 cells examined during repeat leukocyte culture. G-banded analysis of a profoundly MR patient reported previously as having a group-G ring chromosome showed the abnormal chromosome to be a No. 22, a deletion of the long arms at q22; it was seen occasionally in acrocentric association, in contrast with earlier reports. (14 refs.)

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MEDICAL ASPECTS — Etiologic Groupings Congenital malformations

1173 FARPOUR, HABIB; & *MAHLOUDJI, MOHSEN. Familial cerebrotendinous xanthomatosis: report of a new family and review of the literature. Archives of Neurology, 32(4):223-225, 1975.

A new family was found in which 2 children were affected with cerebrotendinous xanthomatosis (CTX), a rare familial disease characterized

clinically by juvenile cataracts, swelling of Achilles tendons, and a variable neurological syndrome with cerebellar ataxia as the most prominent feature. The parents in this family were first cousins and were both healthy; of their 7 children, the third and sixth were affected with the disease. The first symptoms of CTX may not appear until adult life, and the course is extremely slow. The mode of inheritance is autosomal recessive.

Families have been reported from Belgium, the U.S., Canada, and Iran. The basic defect remains obscure, but recent investigations have shown an excess of cholestanol in the tissues and serum of affected individuals. (8 refs.)

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1174 GARDNER, ERNEST; O'RAHILLY, RONAN; & PROLO, DONALD. The Dandy-Walker and Arnold-Chiari malformations: clinical, developmental, and teratological considerations. Archives of Neurology, 32(6):393-407, 1975.

The Dandy-Walker and Arnold-Chiari malformations are complex disorders that have different causes and mechanisms and begin at different times in the embryonic period. This conclusion is based on an analysis of developmental and teratological considerations in 5 patients with the Dandy-Walker syndrome who had dysgenesis of the cerebellar vermis, cystic dilatation of the fourth ventricle, and a high position of the tentorium cerebelli. The patient may lead a normal life when only these features are present, and additional defects usually account for prominent clinical and pathological features. Aqueductal stenosis was observed in 1 patient, agenesis of the corpus callosum in 4, hydrocephalus in 2, and no additional defects or symptoms in 1 patient. The differing features of these cases, a review of the literature, and an analysis of the development of the human brain emphasize the confusing descriptions of this syndrome and the difficulties in accepting a postulated similarity to the Arnold-Chiari malformation. (117 refs.)

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1175 WOODBURN, MARGARET. Social Implications of Spina Bifida. Atlantic Highlands, New Jersey: Humanities Press, Inc., 1975. 275 pp. Available from Humanities Press, Inc., Hillary House-Fernhill House, Atlantic Highlands, New Jersey 07716. Price, \$15.00.

In southeastern Scotland, questionnaires were administratered to and interviews were conducted with the parents of 86 children, ages 18 months to 38 years, with spina bifida, in order to study the social and practical problems faced by such parents. A diagnosis of myelomeningocele, a more serious condition involving malformation of the spinal cord, was applicable in 74 of the cases. Information was gathered regarding: sibling relationships, the attitudes of neighbors, the amount and type of information available to parents, hospital experiences and operations, birth experiences, education and employment opportunities, housing availability, physiotherapy, footwear, appliances, mobility, overall health, and bladder and bowel functions. It was found that: parents wanted information regarding spina bifida from their doctors in nonmedical terminology in order to better understand the condition; their child's general health did not present any special problems; operations involving the head caused the greatest amount of anxiety; and problems concerning education in normal schools were related to access and mobility.

1176 LOWRY, R. B. Hirschsprung's disease and congenital deafness. *Journal of Medical Genetics*, 12(1):114-115, 1975. (Letter)

A case of short segment Hirschsprung's disease and profound bilateral sensory neural deafness in a male infant who had been given kanamycin for 4 days raises the possibility that patients with this disease may be unusually susceptible to ototoxic drugs, even when appropriate dosages are used. Two out of 8 reported cases of Hirschsprung's disease and deafness may have resulted from ototoxic drugs. Although it has been suggested that the association between Hirschsprung's disease and congenital deafness would be expected to occur purely by chance in 1 in every 5 million births, a survey of handicapped children in British Columbia yielded inconclusive data. However, 2 cases of Hirschsprung's disease (out of 66) were associated with Down's syndrome, 1 with trisomy 16, 1 with X/XX/XXX mosaicism, and another with Smith-Lemli-Opitz syndrome. (4 refs.)

Department of Medical Genetics University of British Columbia Vancouver, British Columbia, Canada 1177 SELLER, MARY J. Prenatal diagnosis of a neural tube defect: Meckel syndrome. Journal of Medical Genetics, 12(1):109-110, 1975.

Features of the rare Meckel syndrome were discovered in a fetus terminated at 19½ weeks' gestation after severe neural tube defect was diagnosed by assay of the alpha-fetoprotein content of the amniotic fluid. In addition to an occipital myelocele, the fetus had polycystic kidneys and postaxial hexadactyly on all extremities. Examination of data on 2 sibs with encephaloceles indicated that 1, and possibly both, were also affected by Meckel syndrome. Although the parents were healthy unrelated Caucasians with normal chromosome complements, the Meckel syndrome appears to be caused by a pleiotropic, autosomal, recessive gene. (7 refs.)

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1178 DAVID, T. J.; & O'CALLAGHAN, SARAH E. Oesophageal atresia in the South West of England. Journal of Medical Genetics, 12(1):1-11, 1975.

Anatomical and family characteristics of 345 patients with esophageal atresia (186 males and 159 females) were examined in a retrospective study of patients born in South West England between 1942 and 1973. There were 21 stillborns. A combination of esophageal atresia with a tracheo-esophageal fistula to the distal esophageal segment was present in 85 percent of the patients; 9 percent had atresia without a fistula. More than half of the patients had other congenital malformations (usually multiple). Nearly all cases seemed to have poor fetal growth, with unequivocal fetal growth retardation in 36 percent of the singletons. A maternal age effect resulted in an excess of mothers under 20 and over 35. There were 21 twins. Esophageal atresia is etiologically heterogeneous and may be a nonspecific consequence of several teratological processes. (59 refs.)

Bristol Royal Hospital for Sick Children Bristol B52 8BJ, England 1179 MCNAMARA, JAMES O.; CURRAN, JOHN R.; & ITABISHI, HIDEO H. Congenital ichthyosis with spastic paraplegia of adult onset. Archives of Neurology, 32(10):699-701, 1975.

Two siblings were encountered who have what is believed to be a unique syndrome of congenital ichthyosis, low normal intelligence, and progressive spastic weakness of adult onset. The 2 patients, a 53-year-old woman, and her 42-year-old brother, have a unique congenital disorder manifested by stationary congenital ichthyosiform erythroderma, coupled with a slowly progressive spastic quadriplegia of adult onset. Some clinical findings suggest peripheral neuropathy in combination with histopathologic features considered indicative of chronic myopathy, which may be explained on the basis of a long-standing mild diabetic peripheral neuropathy. The first patient exhibited impairment of all sensory modalities on the right side, which may be due to hysteria or to a brain stem or thalamic lesion. Elevated IgA values may be attributed to the skin disorder and, since the patients are siblings, autosomal recessive inheritance is the likely pathogenesis of this disorder. (14 refs.)

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1180 MATHEW, NINAN T.; MEYER, JOHN S.; HARTMANN, ALEXANDER; & OTT, ERWIN O. Abnormal cerebrospinal fluidblood flow dynamics: implications in diagnosis, treatment, and prognosis in normal pressure hydrocephalus. Archives of Neurology, 32(10):657-664, 1975.

Regional cerebral blood flow (rCBF) and regional cerebral blood volume (rCBV) were measured in 15 adults with normal pressure hydrocephalus (NPH) and in 10 patients with presumed hydrocephalus ex vacuo, before and after reducing cerebrospinal fluid pressure (CSFP) by removal of cerebrospinal fluid. There was maximal reduction of rCBF and rCBV in the area of the anterior cerebral artery in NPH, but not in dementia due to brain atrophy. After lowering the CSFP by lumbar puncture, both rCBF and rCBV increased in patients with NPH. The most consistent clinical improvement was observed after CSF shunting in

patients with higher preoperative rCBF and maximal increases in rCBF and rCBV after lowering CSFP. Data indicate that, although increased rCBF does play a part in NPH it is not the only factor responsible for the increase in cerebral circulation after CSF shunting. (52 refs.)

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1181 RIDLON, HERRICK C.; MARKLAND, COLIN; GOVAN, DUNCAN E.; LEAD-BETTER, GUY; PRICE, STUART; SCHOENBERG, HARRY; & PERL-MUTTER, ALAN D. Myelomeningocele: suggested minimal urological evaluation and surveillance. Pediatrics, 56(3):477-478, 1975.

The team approach is recommended for urological evaluation of children with myelomeningocele. Initial tests should include blood count, baseline blood urea nitrogen, serum creatinine, urinalysis, and a high-dose intravenous pyelogram using as few films as possible. Routine cystograms are not advised. Intraveneous pyelogram should be done yearly and urinalysis every 5 months until age 3; but between age 3 and adolescence a routine intravenous pyelogram should be done every other year. More frequent tests are advised if any tests are abnormal, if clinical conditions exist, or if a urinary diversion is performed. Catheterization of the stoma should be performed at regular intervals following ileal conduit. Tests whose value have not yet been substantiated include the carbon dioxide cystometrogram, measurement of creatinine clearance, and electrical studies of the bladder and anal sphincter. (8 refs.)

1182 CHEMKE, JUAN; CZERNOBILSKY, BERNARD; MUNDEL, GEORGE; & BARISHAK, Y. ROBERT. A familial syndrome of central nervous system and ocular malformations. *Clinical Genetics*, 7(1):1-7, 1975.

Three of 7 siblings in the same family were affected by severe forms of lissencephaly and the Dandy-Walker anomaly in association with ocular anomalies, consisting of congenital cataracts, retinal dysgenesis, and coloboma of the choroid. The mother's first pregnancy resulted in a female

infant who died 3 days after birth, supposedly with external cranial deformities similar to those of the affected siblings; autopsy was not performed, however. The pathogenesis of these anomalies seemed to be related to the inhibition of normal neuron migration and normal brain differentiation and to abnormal closure of fetal fissures at an early stage of embryonic development. Both parents, third-degree cousins, were healthy Jews of Yemenite origin. Genetic factors were probably involved in this seemingly new, complex malformation syndrome, with autosomal recessive inheritance being most likely. (16 refs.)

Clinical Genetics Unit Kaplan Hospital Rehovot, Israel

1183 PASSWELL, J. H.; GOODMAN, R. M.; ZIPRKOWSKI, M.; & COHEN, B. E. Congenital ichthyosis, mental retardation, dwarfism and renal impairment: a new syndrome. Clinical Genetics, 8(1):59-65, 1975.

Three children in an Iranian family presented with non-bullous congenital ichthyosis, MR, dwarfism, and renal impairment, features apparently constituting the main symptomatology of a new congenital ichthyotic syndrome inherited as an autosomal recessive. Their nephropathy, not described previously in association with congenital ichthyosis syndromes, was manifested on multiple examinations by consistently raised blood urea nitrogen and creatinine levels and a 50 percent decrease in endogenous creatinine clearance, indicating impaired glomerular filtration. The presence of a double kidney and ureter noted in 2 of the affected siblings appeared to be a coincidental finding. All 3 propositi also had a persistently raised serum transaminase level. The absence of any abnormal clinical findings in the parents and the presence of an identical clinical syndrome in 3 of 4 of their offspring suggested autosomal recessive transmission. (14 refs.)

Department of Pediatrics B Chaim Sheba Medical Center Tel-Hashomer, Israel 1184 GOODMAN, R. M.; TADMOR, R.; ZARITSKY, A.; & BECKER, S. A. Evidence for an autosomal recessive form of cleidocranial dysostosis. *Clinical Genetics*, 8(1):20-29, 1975.

Two unrelated consanguineous families with cleidocranial dysostosis were seen over a 3-year period. In each, the family setting, the distribution of the affected members, and the severity of involvement suggested that an autosomal recessive form of this disorder exists in addition to the autosomal dominant form. In one family, an affected 4-year-old boy was institutionalized for SMR, while his 8-year-old brother was of normal intelligence. Their parents were first cousins of Jewish Iraqi origin. A 36-year-old man in another lewish Iraqi family was the product of a niece-uncle marriage. All affected Ss were of very short stature and showed brachycephalic skulls with frontal and parietal bossing, incomplete closure of the anterior fontanelle, wide persistent sutures, small facial bones, and ocular hypertelorism. Other findings included carious deciduous teeth, bilateral absence of the clavicles, and kyphoscoliosis with marked lumbar lordosis. Family studies in both sets of parents and all surviving siblings of the probands revealed no findings suggestive of the disorder. The autosomal recessive form of cleidocranial dysostosis should be suspected highly in any individual who is affected clinically by dwarfism and extensive classical bony changes throughout the body and has normal parents who are consanguineous. (14 refs.)

Chaim Sheba Medical Center Tel-Hashomer, Israel

1185 WELLER, R. O.; & WILLIAMS, B. N. Cerebral biopsy and assessment of brain damage in hydrocephalus. Archives of Disease in Childhood, 50(10):763-768, 1975.

Histological changes in needle biopsies of the cerebral mantle from hydrocephalic children can be useful in assessing brain damage and predicting future intellectual development. Needle biopsies were taken from 12 hydrocephalic patients at the time of ventricular shunt insertion, and 5 patients were biopsied twice or more often during subsequent shunting procedures. Biopsies embedded in epoxy resin for light and electron

microscope examination yielded more useful information than those embedded in paraffin wax. In patients with acute hydrocephalus, there was evidence of axonal degeneration in the white matter. In chronic hydrocephalus, progressive gliosis and signs of cerebral atrophy were more common. No measurable effect of hydrocephalus on myelination was observed. The pattern of changes resembled that seen in experimental animals where the major damage to the brain was detected during the acute phase of high pressure ventricular enlargement. (13 refs.)

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1186 PORTER, F. NELSON. Hydrocephalus treated by compressive head wrapping. Archives of Disease in Childhood, 50(10):816-818, 1975.

Compressive head wrapping with an elastic net cap was successfully utilized as an alternative to a second shunt procedure in a 50-week-old girl with hydrocephalus. The cap was worn continuously until the child was 2 years old, with monthly replacements to maintain tension. When the child was tested at 21 months old with the Griffiths Mental Development Scale, her intelligence was within the average range. Excessive head growth did not recur after the cap was discontinued. The cap was simple to use, easy to apply, well tolerated, and gave a controlled, reproducible pressure. Compressive cranial wrapping is an alternative to shunt procedures for the treatment of mild to moderate hydrocephalus. (11 refs.)

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1187 CLARKE, CYRIL; HOBSON, DEREK; MCKENDRICK, OLIVE M.; ROGERS, S. C.; & SHEPPARD, P. M. Spina bifida and anencephaly: miscarriage as possible cause. *British Medical Journal*, 4(5999):743-746, 1975.

The etiology of anencephalus and spina bifida (ASB) was sought in 2 retrospective Liverpool

(England) surveys and, subsequently, in published findings. Examination of the domestic, family, dietary, and medical environments of the mothers of affected children indicated that although several factors may be important in ASB (significantly shortened gestation period in anencephalus, more cases of spina bifida and other congenital abnormalities among sibs of ASB propositi, parental age effects, potato blight, mother's health during pregnancy), their effects are minor. An analysis of studies in the literature supported the hypothesis that residual pathological trophoblastic material from either a previous miscarriage or a co-twin may interact unfavorably with another fetus to produce ASB, and this may be the primary cause of the condition. This hypothesis is consistent with the observed lack of concordance in twins, the high incidence in females, the maternal age effect, and the greater prevalence in social classes IV and V. There is sufficient support for the hypothesis to warrant a search for evidence of genetic mosaicism in the placentae of ASB children and follow-up of subsequent pregnancies in therapeutic abortions to see whether there is a higher or lower incidence of ASB after these than after miscarriages. (41 refs.)

Nuffield Unit of Medical Genetics University of Liverpool Liverpool, England

1188 WHELAN, D. T.; FELDMAN, W.; & DOST, I. The oro-facial-digital syndrome. Clinical Genetics, 8(3):205-212, 1975.

A 26-year-old Caucasian woman and her 4-year-old daughter manifested the clinical features of the oro-facial-digital syndrome (OFD I), many of which are shared with Mohr's syndrome (OFD II). Both patients had tongue nodules, a bifid tongue, midline lip cleft, high arch or cleft palate, broad nasal root, micrognathia, and clinodactyly, clinical features always found in OFD I and II. The daughter demonstrated ear abnormalities, which should be considered as part of the oro-facialdigital syndrome. Both cases had hydronephrosis caused by a congenital obstruction of the ureter. Renal abnormalities, too, should be considered as part of this expanding syndrome. Clinically, OFD I and II should be regarded as a single syndrome. The cases were similar to most others in that 2 generations of females were affected. Thus, X-linked dominant inheritance was presumed. (21) refs.)

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1189 SKRE, HAVARD. Friedreich's ataxia in Western Norway. Clinical Genetics, 7(4):287-298, 1975.

The prevelence and clinical manifestations of Friedreich's ataxia (FA) were investigated in Western Norway, an area comprising several isolated communities and having a population of 725,000 as of January 1, 1968. Seven unrelated patients with FA served as index cases. Family investigations were performed involving all first degree relatives of index cases. The prevalence of FA was estimated to be 1/100,000 in the population studied. Pedigree information was consistent with autosomal recessive inheritance in all instances. The gene frequency was only 7.9.10⁻⁵, but the consanguinity rate in the observed families was high. The mutation rate was relatively high at 1.6.10-5, per gamete per generation. Ataxia of gait and clumsiness, beginning in the second decade of life and accompanied by hyporeflexia, were the main criteria for a diagnosis of FA; pes cavus and kyphoscoliosis were considered of less diagnostic significance. Unspecific neuropathy occurred in both sibs and other relatives of affected persons with a manifestation pattern in the kindreds suggesting autosomal dominant inheritance. The diagnosis of unspecific neuropathy in FA pedigrees appears to have implications for genetic counseling, since it may be a means of identifying heterozygotes. Epilepsy, EEG abnormalities, and dementia also occured in some cases. (34 refs.)

Department of Neurology School of Medicine University of Bergen Bergen, Norway

1190 Antenatal diagnosis of spina bifida. British Medical Journal, 1(5955):414, 1975. (Editorial)

Spina bifida cystica can be diagnosed antenatally by the measurement of alpha-fetoprotein (AFP) in amniotic fluid, and this method is thought to be preferable to amniocentesis for routine screening. Screening of all pregnant women by measurement of the serum level of AFP is possible and should be followed in patients with high levels of AFP by ultrasonography, to detect anencephaly and to exclude multiple pregnancy, and by amniocentesis to detect open spina bifida. Few false positives have been reported with this method. In 27 mothers of fetuses affected by both open and closed spina bifida cystica, one third had levels of AFP above the 98th percentile. There are unsolved practical and ethical problems associated with antenatal screening and selective abortion, but unless the risk of amniocentesis in the second trimester of pregnancy proves unexpectedly high, general antenatal AFP screening for spina bifida should be seriously considered. (25 refs.)

1191 DUBOWITZ, V. Neuromuscular disorders in childhood: old dogmas, new concepts. Archives of Disease in Childhood, 50(5):335-346, 1975.

Although various forms of muscular dystrophy were described over a century ago, advances in muscle biopsy and enzyme histochemical techniques have helped open up the field of muscle pathology and led to the recognition of new disorders. Electron microscopy has delineated some of the dystrophies associated with changes in the muscle at the subcellular level. These techniques have facilitated diagnosis and differentiation of Duchenne dystrophy, various spinal muscular atrophies with a better prognosis, and several congenital myopathies. Recent attempts to identify pathological changes associated with Duchenne dystrophy are based on the number of hyaline fibers, the presence of necrotic fibers, and the presence of regeneration within the muscle. To determine the pathogenesis of muscular dystrophy, theories based on vascular abnormalities and abnormal neural influences are being investigated. Two experimental models which are being used to elucidate the pathogenesis of the dystrophic process entail the behavior of diseased muscle in tissue culture and the transplantation of muscle between normal and dystrophic animals. (45 refs.)

Institute of Child Health Hammersmith Hospital Du Cane Road London, England 1192 LENNOX, E. L.; DRAPER, G. J.; & SANDERS, B. M. Retinoblastoma: a study of natural history and prognosis of 268 cases. British Medical Journal, 3(5986):731-732, 1975.

Eighty-six percent of 268 children who were reported to have retinoblastoma between 1962 and 1968 (in England, Scotland, and Wales) were alive at a 4-year follow-up. Survival rate was influenced by the stage of the tumor at diagnosis and the hospital at which treatment was received. Three of the children who survived for 3 years after treatment died during a subsequent follow-up period (from 1 to 7 years). One patient treated for retinoblastoma during 1962 to 1968 developed a tumor of a different histological type. Nine children who were treated for retinoblastoma in Britain between 1949 and 1968 died of other cancers, including 7 who developed osteosarcomas. (9 refs.)

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1193 EVANS, PHILIP RAINSFORD. Hereditary disease and its control. British Medical Journal, 3(5976):141-144, 1975.

Although there are ethical and practical considerations involved in screening for hereditary diseases, successful screening programs can benefit the patient, parents carrying recessive genes for such diseases as Tay-Sachs disease, the community, and the investigator. Attempted screening programs have been most successful when a condition is known to occur often in a particular group of people and when there is social homogeneity. Screening for metabolic defects before pregnancies occur or amniocentesis of mothers at risk for children with recessively inherited diseases allows the parents to consider limiting their families or terminating pregnancies in which a defective fetus is identified. When a high-risk pregnancy is allowed to continue, prenatal diagnosis often makes early treatment possible. Promising treatment methods for inborn errors of metabolism include intravenous infusions of a specific enzyme and injection of liposomes. (28 refs.)

Hospital for Sick Children Great Ormond Street London, WC1N 3JH, England 1194 SIMPSON, KENNETH. Neonatal respiratory failure due to myotonic dystrophy. Archives of Disease in Childhood, 50(7):569-571, 1975.

Although death from myotonic dystrophy is uncommon in the neonatal period, a case is reported in which severe respiratory involvement accompanied by hypotonia caused the death of a 2-day-old boy with the disorder. Both parents had myotonic dystrophy, and a 22-month-old brother had bilateral facial palsy, bilateral talipes equinovarus and generalized hypotonia, and developmental retardation. In cases of neonatal respiratory failure accompanied by hypotonia, the possibility of myotonic dystrophy should be considered in the differential diagnosis. If this condition is present, the mother of the child will probably exhibit features of the disorder. (7 refs.)

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1195 LORBER, JOHN. Isosorbide in treatment of infantile hydrocephalus. Archives of Disease in Childhood, 50(6):431-436, 1975.

Isosorbide is a promising alternative to surgical treatment of infantile hydrocephalus. The second clinical trial in the use of isosorbide in treating 34 selected cases of infantile hydrocephalus of all types indicated that treatment with 2g/kg body weight every 5 hours is safe, subject to careful monitoring of serum electrolyte, urea, and acid-base balance. In 24 infants, no clinical or biochemical side effects were noted which required interruption or termination of therapy. Surgery was not necessary in 10 of the patients on isosorbide. This group included 3 infants with uncomplicated congenital hydrocephalus of moderate degree and infants whose hydrocephalus was associated with spina bifida and whose cerebral mantle was between 20 and 25mm. A worthwhile delay before surgery was achieved in 19 infants, including 2 infants who were treated for less than 28 days and 2 infants whose operations were delayed for 5 months. Although isosorbide is not as fast and effective as surgery, it is safer and can be followed by an operation. Effects of surgery are usually not reversible. (12 refs.)

The Children's Hospital Sheffield S10 2TH, England 1196 HARPER, PETER S. Congenital myotonic dystrophy in Britain. I. Clinical aspects. Archives of Disease in Childhood, 50(7):505-513, 1975.

An analysis of clinical aspects of congenital myotonic dystrophy in 70 patients in Britain in whom there was evidence of onset at or around birth confirms the existence of a syndrome with many characteristic diagnostic features which differ from those in myotonic dystrophy of later onset. Neonatal hypotonia, motor and mental retardation, and facial diplegia are among characteristic features of the congenital disorder. Prenatal onset is suggested by a high incidence of talipes at birth and hydramnios and reduced fetal movements in pregnancy. Although patients in the present series present a relatively good prognosis for survival, a study of 54 sibships indicated numerous neonatal deaths. Early deaths in the sibships may have resulted from unrecognized cases. (20 refs.)

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1197 HARPER, PETER S. Congenital myotonic dystrophy in Britain. II. Genetic basis. Archives of Disease in Childhood, 50(7):514-521, 1975.

Clinical evidence that the congenital form of myotonic dystrophy results from maternal intrauterine factors affecting individuals carrying the myotonic dystrophy gene was supported by genetic analysis of 54 sibships containing 70 patients. The disorder was maternally transmitted in 51 sibships. At least half the sibs were unaffected, and most affected mothers had few or no symptoms. One instance of paternal transmission was shown, but no instance of a new mutation was found. Among 149 liveborn members of the sibships, 9 individuals were affected but had no clear evidence of congenital involvement. The inheritance of congenital myotonic dystrophy is anomalous; X-linked inheritance is ruled out by the approximately equal sex ratio of affected children. (32 refs.)

Section of Medical Genetics Department of Medicine University Hospital of Wales Heath Park Cardiff CF4 4XN, Wales 1198 WRIGHT, E. V.; MCINTOSH, A. S.; & FOULDS, J. W. Importance of routine α-fetoprotein estimations. Lancet, 2(7938):769, 1975. (Letter)

The importance of alpha-fetoprotein (AFP) screening of all amniotic-fluid specimens that become available is suggested by 2 cases in which elevated levels were found when fluid was being examined for other than AFP estimation. Termination of pregnancy in both cases produced fetuses with meningomyeloceles. In neither of these cases (which occurred in a series of 110 consecutive cases of amniotic fluid analysis) was there any reason to suspect that there was a high risk of central neural-tube defect. (4 refs.)

Department of Human Genetics University of Newcastle upon Tyne Newcastle upon Tyne, England

1199 CHAUBE, SHAKUNTALA; & SWIN-YARD, CHESTER A. The present status of prenatal detection of neural tube defects. American Journal of Obstetrics and Gynecology, 121(3):429-438, 1975.

Various clinical and experimental approaches to the problem of prenatal detection of neural tube defects are described, recent advances in this field are reviewed, and embryogenetic data important in interpreting the significance of changes in prenatal indicators of neural tube defect are presented. Creatine phosphokinase (CPK) and aldolase concentrations studied in the serum of 118 and cerebrospinal fluid (CSF) of 9 patients with myelomeningocele revealed serum CPK to be significantly raised and more responsive to additional muscle injury than aldolase, but the concentrations of both enzymes were lower in these patients than in patients with infantile atrophy or 3 clinical types of cerebral palsy. In studies of maternal serum and amniotic fluid from with experimentally induced myelomeningocele, CPK concentration was also significantly elevated near the end of gestation. Increased amniotic fluid concentration of alphafetoprotein appears to be a reliable indicator of fetuses with open myelocele and/or anencephalus. The reliability of beta trace protein as a marker has been lessened by findings of the variability of its concentration. (79 refs.)

400 East 34th Street New York, New York 10016 1200 LEIGHTON, P. C.; GORDON, Y. B.; KITAU, M. J.; LEEK, A. E.; & CHARD, T. Levels of alpha-fetoprotein in maternal blood as a screening test for fetal neural-tube defect. Lancet, 2(7943):1012-1015, 1975.

A range was established for normal maternal plasma alpha-fetoprotein (AFP) levels on the basis of assay of 3143 blood samples from 930 normal pregnancies and 96 blood samples from 51 women in whom the fetus had a neural tube defect. AFP was estimated by radioimmunoassay between 10 and 40 weeks' gestation. AFP levels in maternal blood in normal pregnancy increased to a peak at 32 weeks and subsequently fell to term. Forty-five normal women had levels above the ninety-fifth centile between weeks 10 and 26; upon repeated sampling within 4 weeks, only 17 (38 percent) had a raised AFP. In contrast, AFP levels were above the ninety-fifth centile of the normal range in 96 percent of affected cases (20 anencephalus, 6 spina bifida) examined between 16 and 26 weeks gestation. Measurement of AFP in maternal blood should become a screening test in all pregnancies. A finding of raised maternal AFP in early pregnancy should lead to repeated maternal plasma AFP assay and clinical review of the case. If the second AFP is normal, it should be repeated. If it remains abnormal, ultrasonography and amniocentesis should be performed, and termination of the pregnancy should be considered if amniocentesis indicates neural tube defect. (21 refs.)

Department of Obstetrics Gynaecology and Reproductive Physiology St. Bartholomew's Hospital Medical College London EC1A 7BE, England

1201 LECK, IAN. Causation of malformations. Lancet, 2(7944):1097, 1975. (Letter)

The multifactorial model of malformations seems to be more plausible than the concept of a single cause on several grounds. The single cause theory for most human malformations does not easily accommodate the fact, for example, that malformations differ epidemiologically. The inference that this phenomenon is due to differences in the miscarriage rate among affected embryos can be refuted by 2 lines of evidence. First, not all groups

at high risk of malformation have low miscarriage rates. Second, the diversity of the frequency patterns for different types of malformations argues against all these patterns being due to differential miscarriage rates. The multifactorial model also seems more plausible embryologically, since many developmental processes that are related to malformations seem to have several quantitative components, all of which may be involved in determining whether malformation occurs. (8 refs.)

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1202 KLEINEBRECHT, J.; & DEGENHARDT, K.-H. Causation of malformations. Lancet, 2(7944):1097-1098, 1975. (Letter)

The initial results of a prospective study of factors responsible for human congenital malformations suggest that minor extrinsic and intrinsic factors may cause human malformations. The causes of 170 major malformations (out of 9,750 births) were 14.2 percent chromosomal aberrations or genetic transmission, 42.4 percent multifactorial, and 43.4 percent unknown. Special groups of malformations were tested for associations with data collected in the study; old mothers, old grandmothers at birth of mother, abortions in previous pregnancies, premature birth, and diabetes in the mother were associated with severe malformations of the heart. A group of 44 major malformations was matched with 88 controls for possible influencing factors, and a linear discriminance analysis was performed. Even with some factors each not discriminating significantly between the malformation and matched control groups, discrimination was possible between the 2 groups. Thus, the malformations in the sample may have been caused by the combination of many minor, extrinsic and intrinsic, factors.

Institut fur Humangenetik Klinikum der Johann Wolfgang Goethe-Universitat Frankfurt am Main Federal Republic of Germany 1203 SKRE, HAVARD. The significance of "unspecific neuropathy" in hereditary ataxias and related disorders. *Clinical Genetics*, 7(3):209-218, 1975.

The ratios of unspecific neuropathy (Un), proposed as a common designation for the minor neurologic findings found frequently in the relatives of persons with hereditary ataxias and related disorders (HA), were analyzed in 383 males and 374 females belonging to 87 kindreds, and the observed clinical patterns were studied. Neurologic findings such as polyneuropathy, hyporeflexia, deformities, ataxic signs, and inverted plantar responses were found more often in unaffected sibs and other close relatives of people with HA than in the normal population. On the basis of a scoring system introduced to represent a wide range of neurologic signs, a total score of 3.5 was selected as an operational limit for normality. The number of people with higher scores was found to be greater in families where HA segregated as a recessive trait than in those where it segregated as an autosomal dominant trait. The frequency of high-scoring cases seen in first and second degree relatives of patients with dominant HA suggested polygenic inheritance, whereas Un clustering in families with autosomal dominant HA could be due to a selection phenomenon through a negative assortative mating. The distribution of Un in families with recessive HA traits was compatible with the hypothesis that the Un state in heterozygotes for X-linked recessive HA may frequently represent gene manifestation. If the present notions are confirmed, diagnosis of an Un state might become useful in genetic counseling. (22 refs.)

Institute of Medical Genetics University of Oslo Oslo, Blindern, Norway

1204 PINSKY, LEONARD; FINLAYSON, M. H.; LIBMAN, I.; & SCOTT, B. H. Familial amyotrophic lateral sclerosis with dementia: a second Canadian family. *Clinical Genetics*, 7(3):186-191, 1975.

Dementia occurred as a primary expression of familial, adult-onset amyotrophic lateral sclerosis (ALS) in 1 of 3 affected family members. No dementia was seen in the father (CA 72 years), who presented with lower motor neurone disease affecting the limbs, or the son (CA 42 years), who

had bulbar paralysis. The 5-year illness of the daughter (CA 50 years) began with spastic right lower limb weakness and progressed to paralysis of the legs, severe upper limb weakness, and profound dementia. In the later stages there was neurogenic atrophy of muscles, but sensory deficits were absent, and bulbar signs were not prominent. Her cortical pathology had a distinctive fronto-temporal distribution. Her son sought genetic counselling immediately prior to his marriage. He was given a cautiously hopeful genetic prognosis until his maternal uncle presented with bulbar paralysis, when the familial nature of the ALS in the family became self-evident. (24 re.s.)

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1205 MALM QVIST, E.; LINDSTEN, J.; NORGAARD-PEDERSEN, B.; HELL-STROM, B.; & SUNDBERG, B. Elevated levels of alfa fetoprotein in maternal serum and amniotic fluid in two cases of spina bifida. Clinical Genetics, 7(2):176-180, 1975.

A therapeutic abortion was carried out in 2 cases of spina bifida because of an increased alphafetoprotein (AFP) concentration in the amniotic fluid as well as in the maternal serum. One woman had been pregnant twice with a man whose sister had spina bifida, and she had been delivered of a girl who died of multiple malformations due to trisomy 13. The second woman was the mother of a girl with spina bifida. In both cases, the first amniocentesis was performed rather late in pregnancy (nineteenth week of gestation), since the parents were not aware earlier that prenatal diagnosis was possible. Due to the irregular scheduling of AFP determinations at the time, the delay between the first and second amniocenteses was also unnecessarily long in both cases. The 2 amniotic fluid samples were obtained with an interval of 3-5 weeks, the second sample being taken to confirm the elevated AFP levels found initially. The decline in AFP concentration was more rapid in the cases with spina bifida than the slope of the normal reference curves. These 2 prenatally diagnosed cases of spina bifida confirm the clinical use of determination of AFP levels in the amniotic fluid and maternal serum in pregnant women with a family history of anencephaly and/or spina bifida. (11 refs.)

Department of Clinical Chemistry Karolinska Hospital Stockholm, Sweden

1206 JUBERG, RICHARD C.; & VAN NESS, MADGE B. A new form of hereditary short limbed dwarfism with microcephalus. Clinical Genetics, 7(2):111-119, 1975.

A sibship in which 2 infants, a male and a female, were similarly affected with short-limbed dwarfism, microcephalus, and an anomalous brain was probably due to a single, rare, autosomal recessive gene. Both infants were born before term and were small in weight, height, and head circumference. Neither showed subsequent neurological development beyond that of the newborn. Both were morphologically bizarre, with a small cranium, receding forehead, and shortened limbs as well as a peculiarly attached right smallest toe. Each had a similarly small brain with hydrocephalus and bony abnormality, one of the posterior fossae and the other of the base of the cranium. Functionally, each failed to cope normally with respiratory infection and developed similar leukemoid reactions, one of them dying of respiratory infection at 3 months, and the other, of seizures and central nervous system infection at 5 months. The combination of deformities did not resemble any previously recognized forms of short-limbed dwarfism. The fact that the disorder would be recognized initially from the mating of 2 persons with greatly different ancestry (a Japanese female from Japan and a Polish male from Michigan) was considered unique. (5 refs.)

Louisiana State University School of Medicine P.O. Box 3932 Shreveport, Louisiana 71130

1207 QAZI, QUTUB H.; & REED, T. EDWARD.

A possible major contribution to mental retardation in the general population by the gene for microcephaly. Clinical Genetics, 7(2):85-90, 1975.

MR was observed in 11 of 24 parents (2 fathers not ascertained) and 11 of 33 nonmicrocephalic siblings among 13 families with genetic microcephaly. A total of 28 microcephalic children were

born to these families. Although the 3:1 sex ratio in favor of males deviated significantly from the equality expected for autosomal recessive inheritance, it did not differ significantly from that of their nonmicrocephalic siblings. In accordance with this mode of inheritance, it was assumed that all parents and two-thirds (22 of 33) of the siblings in these 13 families were carriers of the gene for microcephaly. Therefore, 46 percent of the parents (11 of 24) and 50 percent of siblings (11 of 22), all presumed heterozygotes, were MR. On the basis of pooled data from 3 studies and an estimated incidence of 1:40,000 for genetic microcephaly, it can be postulated that 0.34 percent of the population at large is MR, since they carry 1 gene for microcephaly, and about 1 of 9 MRs in the general population is a heterozygote for the gene for microcephaly. (10 refs.)

Department of Pediatrics Downstate Medical Center 450 Clarkson Avenue Brooklyn, New York 11203

1208 VAN BIERVLIET, J.P.G.M.; & VAN HEMEL, J. O. Familial occurrence of the G syndrome. Clinical Genetics, 7(3):238-244, 1975.

The familial occurrence of the G syndrome of multiple congenital anomalies affected a mother and her 3 sons, the first known cases from the Netherlands. All showed the characteristic syndromal facies, low total ridge count, marked hypertelorism, mild MR, and severe dysphagia in infancy which diminished with age but did not disappear completely in the boys. The mother presented the most striking history of dysphagia yet reported in a presumably heterozygous woman. One of the boys was unsual in that he had perineal hypospadias with cryptorchidism. The other 2 had penile hypospadias with descended testes. Unilateral cleft lip, associated in 1 case with cleft palate and presenting severe feeding problems, has not been observed before in this syndrome. Pedigree data were compatible with autosomal dominant inheritance and indicated that females could be equally or almost as severely affected as males. (5 refs.)

Wilhelmina Kinderziekenhuis University Children's Hospital Nieuwe Gracht 137 Utrecht, The Netherlands 1209 PHILIP, ALISTAIR G. S. Hydranencephaly. *Pediatrics*, 56(4):616-617, 1975. (Letter)

The hypothesis presented by Koffler et al. (54:770, 1974) attributing hydranencephaly to elevated hematocrit levels in newborns is not without merit but appears to be based on shaky clinical evidence. The authors indicate that their determinations of hematocrit levels were made on capillary blood but do not make it clear how they were obtained. Their statements concerning polycythemia and hyperviscosity relate to venous blood. Reports in the literature suggest that venous hematocrit readings still within the accepted range of normal may yield quite erroneously high capillary hematocrits. Since no studies of viscosity were carried out, it may not be valid to assume that hyperviscosity was present just because the capillary hematocrit was greatly elevated. Hydranencephaly is reported as developing between birth and 54 days of age, when the head transilluminated throughout. The head is rarely enlarged at birth, however, and diagnosis might have been made earlier if transillumination had been carried out at that time. (3 refs.)

University of Vermont Burlington, Vermont 05401

1210 CORCORAN, R.; & ENTWISTLE, G. D. VACTERL congenital malformations and the male fetus. *Lancet*, 2(7942):981-982, 1975. (Letter)

Of the last 18,500 total births at one maternity department, 5 babies without chromosomal abberations exhibited a combination of 3 or more of the major congenital anomalies that characterize the VACTERL (vertebral, anal, cardiac, tracheal, esophageal, renal, limb) group, and 4 of them were males. The preponderance of males in this small series supports the disproportionate male sex incidence in this syndrome reported previously. An investigation into possible prenatal exposure to exogenous hormones is being conducted. (3 refs.)

St. Catherine's Hospital Birkenhead L42 OLQ, England 1211 SELLER, MARY J.; & ADINOLFI, MAT-TEO. α-fetoprotein and alternative markers for the antenatal diagnosis of neural tube defects. Lancet, 2(7942):984-985, 1975. (Letter)

Immunoglobulin (Ig) and β-trace protein were estimated in the amniotic fluids of fetuses at risk for neural tube defects, and the levels of IgG, β2-microglobulin, and isozyme were measured. IgM was estimated also in the cerebrospinal fluid and in sera from normal fetuses and fetuses with neural tube defects. IgM was detected in 3 of 9 normal amniotic fluids and in 2 of 9 fluids from fetuses with neural tube defects in levels of less than 0.7mg/dl. This class of protein was also present in traces in 4 of 9 cerebrospinal fluids obtained from fetuses between 14 and 25 weeks of age; in 7 sera from fetuses with neural tube defects, it was found in concentrations similar to those present in normal age-matched fetuses. The levels of IgG and \(\beta^2\)-microglobulin in 2 groups of amniotic fluids from normal and abnormal fetuses were also found to be similar, and individual values of \beta-trace protein were similar in amniotic fluids from 7 fetuses with neural tube defects and 9 normal fetuses. The findings are at variance with previous reports of high levels of IgM and β-trace protein in amniotic fluids as indications of fetal abnormalities of the central nervous system. (14 refs.)

Paediatric Research Unit The Prince Philip Research Laboratories Guy's Hospital Medical School London SE1 9RT, England

1212 NORGAARD-PEDERSEN, B. Screening for neural-tube defects by a haemagglutination test for serum-alpha-fetoprotein. *Lancet*, 2(7940):877-878, 1975. (Letter)

A sensitive hemagglutination (HA) test and radioimmunoelectrophoresis were employed to estimate alpha-fetoprotein in 250 maternal-serum samples and in 115 sera from patients with hepatoma or teratocarcinoma. Use of the HA technique yielded a distinctive positive reaction in all sera with an alpha-fetoprotein concentration. Preliminary results indicate a possible use for the HA test, not only as a test for alpha-fetoprotein-producing tumors but also for prospective screening for neural tube defects. By allowing semiquantitative estimation of the alpha-feto-

protein level, and thus indicating whether an amniotic fluid alpha-fetoprotein estimation should be carried out, the HA test could represent a simple alternative in prospective screening trials to the more complicated radioimmunoassays. (9 refs.)

Department of Clinical Chemistry A Rigshospitalet, University Hospital DK-2100 Copenhagen, Denmark

1213 BERMAN, PAIGE. Congenital abnormalities associated with maternal clomiphene ingestion. *Lancet*, 2(7940):878, 1975. (Letter)

A girl with multiple congenital abnormalities was born 39.5 weeks after her mother's last menstrual period. The mother had taken clomiphene at the recommended periods for 2 months (February and March, 1974), did not menstruate in March, and had her last period in April, 1974; the subsequent 4.5 months were marked by nausea and vomiting. The daughter had multiple malformations of the fingers, spine, lower limbs, and hips; she had telecanthus and a broad nasal bridge, and the left kidney was not displayed on intravenous urography. While this pattern of malformation has been reported often, no single specific cause has ever been determined. (5 refs.)

Department of Medical Genetics Montreal Children's Hospital Montreal, Quebec, Canada

1214 NADLER, HENRY L. Present status of the prevention of neural tube defects. *Pediatrics*, 55(6):751-753, 1975.

The potential for preventing a number of severe fetal neural tube defects has increased due to recent developments in the rapidly expanding field of intrauterine diagnosis. It has been established that these defects may be detected by a variety of techniques, including X-radiography, ultrasonography, fetography, fetoscopy, and, most important, biochemical analysis of amniotic fluid. Simple roentgenography permits diagnosis of anencephaly, but this technique, like fetography, is primarily of value late in pregnancy. In contrast, ultrasonography has been effective in the detection of anencephaly even prior to 20 weeks' gestation. Although these newer techniques may

confirm the diagnosis of myelomeningocele, they have yet to be of significant value in establishing the diagnosis early in the second trimester. Direct fetal visualization should, theoretically, be the optimal method for detection of central nervous system defects, but it remains a research procedure at present. Biochemical analyses of amniotic fluid are currently the most reliable methods for diagnosing central nervous system malformations, with quantitation of levels of α -fetoprotein in amniotic fluid constituting the most promising approach. (13 refs.)

Children's Memorial Hospital Chicago, Illinois 60614

1215 ROBERTS, C. J.; & POWELL, R. G. Interrelation of the common congenital malformations: some aetiological implications. *Lancet*, 2(7940):848-850, 1975.

Analysis of congenital defects in a population of 90.921 singleton births revealed a strong interrelationship between malformations. Of the total births, 3,242 had congenital defects by the second anniversary of birth. Two or more defects were recorded for 325 infants (10 percent of the series). Among the interrelations of the 232 cases (7 percent of the series) included in the study, 84 percent of lung defects, 70 percent of kidney defects, 34 percent of eye defects, 19 percent of cleft palate, and 15 percent of spina bifida coexisted with other defects which could not be designated as subsequently derived structural changes. The strength and intimacy of these interrelations, together with the current absense of strong evidence that conventional physical and chemical teratogens are substantially involved in the causation of human malformations, favor the theory of a single, probably intrinsic, cause of most human malformations. (5 refs.)

Department of Community Medicine Welsh National School of Medicine Cardiff, Wales

1216 HOUGEN, THOMAS J.; EMMANOULI-DES, GEORGE C.; & MOSS, ARTHUR J. Pulmonary valvular dysfunction in children with ventriculov enous shunts for hydrocephalus: a previously unreported complication. *Pediatrics*, 55(6):836-841, 1975.

A previously unreported cardiovascular complication of ventriculovenous shunts for hydrocephalus, involving the pulmonary valve apparatus, occurred in 2 boys. Both cases were originally considered cardiologic problems because of the pulmonic valve dysfunction. A 7-year-old boy who had been treated with a ventriculovenous shunt at 8 months of age because of aquaductal stenosis and hydrocephalus was referred for evaluation of a cardiac murmur and subsequently for evaluation of slow development and seizure disorder. Pulmonary insufficiency secondary to a displaced shunt catheter was diagnosed. A ventriculojugular shunt was performed in a 5-month-old boy because of hydrocephalus. No cardiac murmurs were documented until age 2 years, when a grade 2/6 systolic ejection murmur was heard at the lower left sternal border. One year later a diastolic murmur was heard for the first time. Pulmonary hypertension secondary to catheter-induced pulmonary emboli was found. In the first case, the embolized catheter was removed by thoracotomy, and recovery was uneventful. In the second case, the catheter was left in situ because of its peripheral position. (31 refs.)

Department of Pediatrics UCLA School of Medicine Los Angeles, California 90024

1217 CLEAVER, JAMES E.; & BOOTSMA, D. Xeroderma pigmentosum: biochemical and genetic characteristics. Annual Review of Genetics, 9:19-38, 1975.

The cellular phenotype and biochemical characteristics of xeroderma pigmentosum (XP) are described, along with other high and low DNA-repair diseases and the possible significance of such repair in theories of aging and carcinogenesis. Biochemical defects in the XP variant and the role of caffeine in DNA repair are reviewed, as well as DNA repair in XP. heterozygotes and response of XP cells to various mutagens and chemical carcinogens. The relative sensitivity of XP cells and the number of new bases incorporated into their DNA by excision repair depend on the detailed chemistry of the DNA damage and its repair but do not seem to be correlated in any simple manner with the mutagenic and carcinogenic potential of a chemical. Aging theories involving repair processes find little support from studies of XP; XP patients and cells in vitro as a model show none of the signs

of premature aging that should be observed if defective excision repair of base damage had any bearing on the aging process. The association of defective excision repair of ultraviolet (UV) damage with UV-induced skin cancer in XP, the defective repair of O⁶ alkylated guanine in the brain where ethyl nitrosourea induces tumors, and the photoreactivation of UV-induced thyroid tumors in fish all point to a connection between the amount of DNA damage and the efficiency of its repair as an important factor in induced carcinogenesis. (109 refs.)

Laboratory of Radiobiology University of California San Francisco, California 94143

1218 KOROBKIN, ROWENA. The relationship between head circumference and the development of communicating hydrocephalus in infants following intraventricular hemorrhage. *Pediatrics*, 56(1):74-77, 1975.

The records of 6 premature infants (gestational age of 29 to 36 weeks) with intraventricular hemorrhage and subsequent hydrocephalus in the first weeks of postnatal life were reviewed. Head circumferences were measured at intervals from birth and were plotted on O'Neill's head circumference/age chart for premature babies and ratio chart for predicting eventual head size in early stages of infantile hydrocephalus. Infants whose head circumferences were predicted to be more than 5cm greater than the median at 1 year of age were considered to be in O'Neill's group 3. There was a 9- to 20-day delay between clinically suspected intraventricular hemorrhage and clinically evident macrocephaly for all the infants. Three infants failed to reach group 3; 1 infant reached this stage at 2 weeks of age, approximately the same time as the head circumference began enlarging clinically; and the other 2 did not reach this stage until 3 weeks of age, 6 and 11 days after the head circumference was clearly expanding abnormally. Air ventriculography performed in 5 infants within 3 days of abnormal acceleration of head circumference growth showed moderate to severe ventricular dilatation in all cases. Asymptomatic ventricular dilatation was probably progressive until a critical point when head circumference expanded rapidly, since there was no associated clinical deterioration coincident with the rapid increase in head circumference. Enlarging head circumference may be a late and insensitive indicator of hydrocephalus. (11 refs.)

Department of Neurology University of California San Francisco, California 94143

1219 IANCU, T.; KOMLOS, L.; SHABTAY, F.; ELIAN, E.; HALBRECHT, I.; & BOOK, J. A. Incontinentia pigmenti. Clinical Genetics. 7(2):103-110, 1975.

Incontinentia pigmenti was diagnosed in the seventh-born child (female) of an Arab family, the first-born girl in a Jewish family of Indian origin, and the first-born girl as well as another daughter of a Jewish-Ashkenazi mother with mild alopecia, dental anomalies, and 2 areas of linear pigmentation over her back. One case had neurological signs and eye involvement, and 3 cases, only skin involvement. Clinical symptomatology was generally typical for incontinentia pigmenti, but the vesicular-bullous stage recurred in 1 case even after the skin healed twice. With the exception of this case, the infants were not diagnosed correctly during the neonatal period. Blood eosinophilia was noted in the 3 patients who could be examined during the vesicular-bullous phase of the disease; total eosinophilia reached up to 4500/mm3. In all cases, skin biopsies revealed features typical for incontinentia pigmenti, namely, presence of intraepithelial vesicles containing eosinophils, hyper- and parakeratosis, acanthosis, and pearl formation in the deeper layers of the dermis. Increased chromosomal damage (breakages and gaps) was found in the blood of all analyzed family members, affected as well as unaffected. Skin analysis did not reveal significantly more damaged chromosomes in the culture derived from the affected area. (11 refs.)

Department of Pediatrics Sharon Hospital Petah-Tikvah, Israel

MEDICAL ASPECTS — Etiologic Groupings Prematurity and low birthweight

1220 NEAL, MARY V. Vestibular stimulation and development of the small premature infant. Resources in Education (ERIC), 11(4):134, 1976. 15 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED115395.

The effects of vestibular stimulation on the developmental behavior, respiratory functioning, weight and length gains, and morbidity and mortality rates of premature infants were explored in 20 infants who were divided into 4 groups of 5 infants each. The stimuli varied for each group: Group A infants were rocked gently in a motorized hammock within their incubators for 30 minutes, 3 times a day; infants in Group B were also placed in a motorized hammock, but they could choose to remain still or begin movement themselves by any slight bodily motion; in order to control for variables such as fetal position and extra handling, Group C infants were placed in a stationary hammock; Group D served as a control group and were the recipients of traditional nursing care. Higher pH levels and increased linear growth were found in Group A than in the other groups, and Group B infants gained the greatest amount of weight. Interpretation of these data indicate that the development of integrating biological behaviors of the small premature infant may be influenced by a specific pattern of motion.

1221 KORNER, ANNELIESE F.; KRAEMER, HELENA C.; HAFFNER, M. ELLEN; & COSPER, LORNA M. Effects of waterbed flotation on premature infants: a pilot study. *Pediatrics*, 56(3):361-367, 1975.

On the basis of evidence that the intact functioning of the vestibular system is crucial for normal development, 2 types of waterbeds were developed to impart compensatory vestibular-proprioceptive stimulation to premature infants. The safety of waterbed flotation was ascertained by placing 10 infants on a gently oscillating waterbed before the sixth postnatal day. After 7

days on the waterbed, experimental babies did not differ from controls with regard to vital signs, weight, or frequency of emesis. Infants on the oscillating waterbed, however, had significantly fewer apneic spells, with those placed on the waterbed during the first 4 days of life benefitting more than those placed later. Extensive clinical observations of babies placed on a nonoscillating waterbed at the request of the medical and nursing staff (for up to 52 days) suggested benefits for very small premature infants with severe skin problems, for very small babies recovering from abdominal surgery, and for infants receiving parenteral nutrition. (18 refs.)

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1222 COZZI, F.; & *WILKINSON, A. W. Low birthweight babies with oesophageal atresia or tracheo-oesophageal fistula. Archives of Disease in Childhood, 50(10):791-795, 1975.

The relationship between birth weight, gestational age, and other factors which influence survival and choice of treatment was studied in 142 babies with esophageal atresia. Twenty-one percent of the babies were preterm, 19 percent were small-fordates, and 60 percent were born at term and weighed more than 2.5kg. Preterm babies had a higher incidence of respiratory distress and other severe anomalies, and low birth weight babies had a greater incidence of pneumonia. About 70 percent of small-for-dates and 33 percent of preterm infants tolerated division of the fistula and primary esophageal anastomosis as well as good-sized term babies. Mortality was similar for all babies treated by primary anastomosis. With staged operation the chance of survival was less. In preterm babies, associated severe anomalies were a special lethal factor. (8 refs.)

*Institute of Child Health 30 Guildford Street London WC1N 1EH, England 1223 SCOTT, P. H.; BERGER, H. M.; KEN-WARD, CAROLINE; SCOTT, P.; & *WHARTON, B. A. Effect of gestational age and intrauterine nutrition on plasma transferrin and iron in the newborn. Archives of Disease in Childhood, 50(10):796-798, 1975.

To establish the effects of gestational age and intrauterine nutrition on the plasma concentrations of transferrin and iron, these substances were measured in the cord blood of 106 babies of varying nutritional status and gestational age. Serum transferrin rose with gestational age, and serum iron concentration increases were parallel to transferrin rises. Transferrin was not lower in light-for-date (malnourished) babies. Plasma transferrin and iron concentrations in the fetus during the last trimester of pregnancy were affected by the maturity of the pregnancy but are independent of the nutritional status of the fetus. Although the low transferrin levels, particularly in preterm babies, may suggest stopping the parenteral administration of iron in the neonatal period, transferrin evidence alone is not sufficient to merit withholding supplementary oral iron from low birthweight babies who are not being breast fed. (22 refs.)

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1224 STEIN, HARRY. Maternal protein depletion and small-for-gestational-age babies. Archives of Disease in Childhood, 50(2):146-148, 1975.

Biochemical features were assessed in 103 mothers of single low birth weight babies in an underprivileged urban African population suffering from endemic malnutrition and were correlated with fetal growth. Of the 54 mothers with serum albumin levels of 30g/l or above, 30 (56 percent) had babies who were appropriate for gestational age, and 24 (44 percent) had babies who were small for gestational age. Of the 49 mothers with serum albumin levels below 30g/l, 12 (24 percent) had babies who were appropriate for and 37 (76 percent) had babies who were small for gestational age. The difference in the maternal serum albumin levels of the appropriate-for and small-forgestational-age baby groups was statistically significant at p<0.005. The study confirms a correlation between low maternal serum albumin levels and the birth of small-for-gestational-age babies that cannot be explained on the basis of the normal serum albumin variation during pregnancy. The findings suggest that protein depletion, as part of the picture of chronic malnutrition, may be significant in the etiology of small-for-gestational-age infants. (17 refs.)

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1225 MOHANRAM, M.; & KUMAR, AJI T. Ascorbic acid and tyrosine metabolism in preterm and small-for-dates infants. Archives of Disease in Childhood, 50(3):235-237, 1975.

Markedly increased plasma and urinary tyrosine levels in preterm infants do not result from poor ascorbic acid status. Determination of ascorbic acid in both plasma and leukocytes in 11 normal, 17 preterm, and 4 small-for-date infants showed no differences in basal levels of tyrosyl derivatives. Preterms, however, showed higher basal excretion of tyrosol derivatives than the other 2 groups. After protein load the excretion of tyrosyl derivatives was higher than the basal level in preterms. The defective tyrosine metabolism in preterms seems to relate to period of gestation rather than to birth weight. (14 refs.) National Institute of Nutrition Indian Council of Medical Research Hyderabad 500007, India

1226 GLASS, LEONARD; LALA, RASILA V.; JAISWAL, VISHNU; & NIGAM, SAR-VESH K. Effect of thermal environment and caloric intake on head growth of low birthweight infants during late neonatal period. Archives of Disease in Childhood, 50(7):571-573, 1975.

The retarding effect of subthermoneutral temperatures on head growth was confirmed in a study of 42 asymptomatic low birth weight infants. Newborn infants (930 to 1800 grams) were matched for birth weight and gestational age and reared under 1 of 5 combinations of thermal environment and caloric intake after the first week of life. Environmental air temperatures of about 32 degrees centigrade had a retarding effect on

head growth which was partially compensated for by an increase in caloric intake. If infants were not exposed to slightly cool environmental temperature, there did not appear to be any benefit in increasing the daily caloric intake above 120 calories per kilogram daily. Whether differences in head growth over this short and critical period (2 weeks) ultimately affect neurological development is yet to be determined. (8 refs.)

The Jewish Hospital 555 Prospect Place Brooklyn, New York 11238

1227 FOSBROOKE, AUDREY S.; & *WHARTON, BRIAN A. "Added lactose" and "added sucrose" cow's milk formulae in nutrition of low birthweight babies. Archives of Disease in Childhood, 50(6):409-418, 1975.

Twenty-nine low birth weight babies were observed throughout the first 3 months of life to determine the effect of added lactose and added sucrose cow's milk formulas on growth and fat metabolism. The addition of carbohydrate successfully reduced the concentration of protein and minerals to levels nearer those in human milk. The addition of lactose was associated with diarrhea severe enough to require diet alteration in the first days of life and metabolic acidosis in the first week. The group fed formula with added lactose was slightly fatter and had slightly higher concentrations of plasma triglycerides than the group fed more sucrose. No objective contraindication to the addition of sucrose to cow's milk formula was found, despite teleological evidence in favor of lactose. Similar sequential changes in the fatty acid composition of the plasma and tissues lipids were found in both groups and were not related to the quality of the dietary carbohydrate. (34 refs.)

*Infant Development Unit Queen Elizabeth Medical Centre Edgbaston, Birmingham B15 2TG, England

1228 PERLMAN, M.; & *DVILANSKY, A. Blood coagulation status of small-for-dates and postmature infants. Archives of Disease in Childhood, 50(6):424-430, 1975.

Small-for-dates and postmature infants may be at risk for blood coagulation abnormalities. When blood coagulation data were compared for small-for-date infants, postmature infants, and normal controls in a prospective study, there was often evidence of intravascular coagulation in the first 2 groups. Abnormal coagulation findings correlated with the degree of growth retardation as well as the degree of postmaturity. Clinical findings associated with coagulation abnormalities included macroscopical and neonatal polycythemia, but not asphyxia. The pivotal role of the placenta in coagulation is suggested. Important approaches to the prevention of coagulation disorders in small-for-dates and postmature infants include the early recognition of fetal distress and the establishment of criteria for obstetric intervention. (25 refs.)

*Soroka Medical Centre Beersheba, Israel

1229 SABBAGHA, RUDY E.; TURNER, J. HOWARD; & CHEZ, RONALD A. Sonar biparietal diameter growth standards in the rhesus monkey. American Journal of Obstetrics and Gynecology, 121(3):371-374, 1975.

Sixty-seven pregnant Macaca mulatta monkeys with known breeding dates (+1 day) were followed by serial sonar cephalometry at specified intervals varying from 1 to 3 weeks in order to assess fetal head growth. A normal biparietal diameter (BPD) growth curve was constructed along 4 Herrera percentile divisions, namely, the tenth to the twenty-fourth, twenty-fifth to forty-ninth, fiftieth to seventy-fourth, and seventy-fifth to ninetieth. The standard of intrauterine growth that was achieved corresponded to the gestational time interval of 80 to 150 days, with assumedly normal BPD values corresponding to 5-day gestational intervals. Evaluation of head growth indicated clearly that, with advancing fetal age, the BPD continues to increase within the confines of its initially assigned percentile limits. It was particularly noteworthy that fetuses whose BPD values placed them initially in the tenth to twenty-fourth or seventy-fifth to ninetieth percentiles had a very high probability (>0.9) of remaining in that range. The observation that monkey fetuses of the same age, when subgrouped according to their BPD readings, will continue to grow within the confines

of their respectively assigned percentile range is a biologic phenomenon not previously reported. (10 refs.)

Department of Obstetrics and Gynecology University of Pittsburgh School of Medicine Magee-Womens Hospital Halket Street and Forbes Avenue Pittsburgh, Pennsylvania 15213

1230 ALTSHULER, GEOFFREY; RUSSELL, PETER; & ERMOCILLA, RUFINO. The placental pathology of small-for-gestational age infants. American Journal of Obstetrics and Gynecology, 121(3):351-359, 1975.

Sixty-three referred placentas associated with singleton small-for-gestational age infants were assessed by a complete gross and light microscopy evaluation. Abnormalities were found in 58. Seventeen of 63 specimens (27 percent) featured placental villitis. A specific infectious agent (cytomegalovirus) was proved in only 2 instances, but the evidence suggested chronic intrauterine infection as the cause of villitis. The greatest number of abnormalities (40 percent) occurred in relation to placental circulatory disturbances. In 16 of these 25 specimens there was a clinical history of pre-eclampsia of pregnancy; in these placentas, X-cell proliferation was most marked in cases where the pregnancy had progressed to or beyond term. Eight of the specimens which featured villitis of unknown etiology included areas of acute and chronic placental ischemia. Five specimens were catagorized as abnormal placentation excluding single umbilical artery, 5 placentas had a single umbilical artery, and 7 placentas were associated with congenital anomalies. Sixteen percent of the infants died. (36 refs.)

Department of Pathology Children's Hospital Medical Center Cincinnati, Ohio 45229

1231 BRADFIELD, ROBERT B.; LECHTIG, AARON; ALLEN, LINDSAY; & QUE-VEDO, CARLOS. Maternal hair-roots in prediction of low-birth-weight risk. Lancet, 2(7941):928-929, 1975. (Letter)

The ability of hair-root morphology to predict birth weight category, independently and in association with the best anthropometric predictors, was measured in 2 studies with lowincome Ladino (Mestizo) women near parturition. In the first study, 10 of 64 mothers produced low birth weight babies (<2.5kg). The correlation between birth weight and maternal head circumference (r²=10 percent, p<0.05) was improved significantly when percentage anagen hair bulbs was added in the form of a multiple regression $(r^2=20 \text{ percent}, p<0.01)$. The mothers with the smallest head circumferences and smallest percentages of growing bulbs had 4 times the proportion of low birth weight babies than did groups with higher values of the same parameters. The results of a second study of 104 Ladino mothers, of whom 44 had low birth weight babies and 44 had satisfactory birth weight (>3.0kg) babies, confirmed the previous finding. The correlation between birth weight and anthropometric measurements (r²=23 percent, p<0.01) was improved significantly when hair-root characteristics were added in the form of a multiple regression (r2=39 percent, p<0.001). (10 refs.)

Department of Nutritional Sciences University of California Berkeley, California

1232 LECHTIG, AARON; HABICHT, JEAN-PIERRE; DELGADO, HERNAN; KLEIN, ROBERT E.; YARBROUGH, CHARLES; & MARTORELL, REYNALDO. Effect of food supplementation during pregnancy on birthweight. *Pediatrics*, 56(4):508-520, 1975.

Chronically malnourished populations of women of child-bearing age in 2 rural Guatemalan villages received a protein-calorie supplement (atole, a gruel), and matched populations in 2 other rural Guatemalan villages received a caloric supplement (fresco, a refreshing cool drink). The supplementation program produced a net increase in total caloric intake. The increase in birth weight for the same amount of calories was not significantly different between fresco and atole villages, and the association between supplemented calories and birth weight was consistent. For the combined sample, the proportion of low birth weight babies in the high-supplement group (>20,000 supplemented calories during pregnancy) was 9 percent compared with 19 percent in the low-supplement group (<20,000 supplemented calories during pregnancy). The relationship between supplemented calories during pregnancy and birth weight (29g of birth weight per 10,000 supplemented calories) was essentially unchanged after statistically controlling for the effect of maternal home diet, height, head circumference, parity, gestational age, duration of disease during pregnancy, socioeconomic status, CA, weight after the first trimester of pregnancy, and different rates of missing data. The relationship of supplemented calories to birth weight was also consistent between siblings of the same mother. (37 refs.)

Institute of Nutrition of Central America and Panama Carretera Roosevelt, Zone 11 Guatemala, Central America

DRORBAUGH, JAMES E.; MOORE, DOROTHEA M.; & *WARRAM, JAMES H., JR. Association between gestational and environmental events and central nervous system function in 7-year-old children. *Pediatrics*, 56(4):529-537, 1975.

Forty-six variables thought to be associated with low birth weight were reviewed for white, single-birth, low birth weight (LBW) infants and sex-matched and CA-matched normal birth weight (NBW) controls, and the variables having the strongest association with an abnormal/suspect designation at age 7 were examined in a larger group of LBW infants. At age 7, 87 of 358 LBW infants had an abnormal/suspect designation, the main responsible exposure variables being gestational age less than or equal to 33 weeks, membranes ruptured more than 24 hours at time of delivery, Apgar score of 6 or less at 5 minutes of age, respiratory distress present, and abnormal neurological examination on the third day of age. On the basis of the presence or absence of each predictor and the outcome, 64 possible combinations were delineated. A high-risk subgroup represented approximately 10 percent of the total LBW sample and detected 24 percent of the 87 children with an unfavorable outcome. Whatever the arrangements for follow-up for other categories of infants at risk, this high-risk subgroup deserves special consideration, particularly as regards the new regional perinatal care centers. They also might be selected for special study of the mechanisms of interference with central nervous system development. (7 refs.)

*Department of Biostatistics Harvard School of Public Health 677 Huntington Avenue Boston, Massachusetts 02115

1234 WINTERS, ROBERT W. Total parenteral nutrition in pediatrics: the Borden Award Address. *Pediatrics*, 56(1):17-23, 1975.

Perfection of safe central venous delivery of hypertonic nutritive infusates has led to the accumulation of substantial experience with this method of feeding in infants and children and to the identification of specific pediatric groups for whom total parenteral nutrition (TPN) is indicated. Provision of TPN to neonates born with major anomalies of the gastrointestinal tract requiring multiple and/or extensive surgical procedures, often including extensive resection of the intestine, and to infants with the syndrome of chronic intractable diarrhea of unknown etiology has proved life-saving. The results of TPN in the management of nutritional problems in very low birth weight infants are not nearly as clearcut, however, and a controlled study will be necessary for precise determination of the role of TPN here. Experience with TPN in adults with inflammatory bowel disease or acute renal failure has been sufficiently encouraging to suggest the evaluation of TPN in pediatric patients with these disorders. Both septic and metabolic complications have been reported in the course of TPN. As a result of research, certain complications can now be minimized or treated, and means for preventing others have at least been identified. (18 refs.)

Department of Pediatrics Columbia University College of Physicians and Surgeons 630 West 168th Street New York, New York 10032

1235 CASHORE, WILLIAM J.; SEDAGHA-TIAN, MOHAMED R.; & USHER, RO-BERT H. Nutritional supplements with intravenously administered lipid, protein hydrolysate, and glucose in small premature infants. *Pediatrics*, 56(1):8-16, 1975. C

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Fat, glucose, and protein hydrolysate were administered intravenously for a minimum of 3 days to 23 premature infants weighing less than 1,500gm at birth, as a supplement to milk

feedings. Growth in the 19 survivors, including 4 infants weighing less than 1,000gm, approximated intrauterine growth rates in all dimensions. In patients of 1,001-1,500gm, better early growth occurred with supplementary intravenous fat, protein hydrolysate, and glucose than with protein hydrolysate and glucose plus milk, glucose plus milk, or milk alone. Mild growth retardation during the first 3 weeks in infants under 1,000gm had little effect on later growth during the nursery stay, and almost all infants, including those weighing less than 1,000gm at birth, were of normal weight, length, and head circumference for their gestational age by the time of discharge. Although metabolic complications did occur, they were reversible when recognized early. Limits of tolerance for all the administered nutrient substances, including water, tended to be narrow, and the nutritional program had to be individualized. Despite little or no oral intake for many days in a large proportion of patients, adequate nutrition for growth was maintained even in infants of borderline viability. Complications of intravenous nutrition did not appear to be related to any of the 4 deaths, 3 of them occurring in infants weighing 700-780gm. (16 refs.)

Providence Lying-in Hospital Providence, Rhode Island

1236 HEIRD, WILLIAM C.; & DRISCOLL, JOHN M., JR. Use of intravenously administered lipid in neonates. *Pediatrics*, 56(1):5-7, 1975.

Once intravenous soybean oil becomes available for improvement of infant nutrition, it is important that it be used cautiously and in a manner which will provide systematic answers to the many questions that exist regarding its use. Although neonatologists have aimed for the achievement of intrauterine growth rates postnatally, such a growth rate has never been shown to be beneficial. It is particularly subject to question when it is achieved with an agent that has not been evaluated thoroughly in very small infants, such as an intravenous soybean oil (Intralipid). For the time being, therefore, those who will be using this agent in small premature infants should be cautioned against automatically accepting 3.5gm/kg/day (or any other specific dose) as the amount that will be tolerated well by all infants. Potential contraindications to the use of intravenous soybean oil must be considered; theoretical problems concern displacement of albumin-bound bilirubin by plasma free fatty acids as well as their competition with bilirubin for free-albuminbinding sites, and the effects of intravenous soybean oil on pulmonary function. (23 refs.)

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1237 STEIN, ISRAEL M.; & SHANNON, DANIEL C. The pediatric pneumogram: a new method for detecting and quantitating apnea in infants. *Pediatrics*, 55(5):599-603, 1975.

The pediatric pneumogram is a simple and useful diagnostic method for detecting and objectively quantifying respiratory rate, rhythm, relative amplitude of inspiration, frequency, and duration of apnea in pediatric patients, as well as any resultant bradycardia. Continuous recordings of respiratory activity have been obtained easily in more than 50 infants ranging in weight from 1 to 10kg. The impedance pneumograph has been employed successfully in a variety of pediatric patients to demonstrate changing patterns of respiration and apnea. In a comparison of the sensitivity and effectiveness of the pediatric pneumogram and nursing observations in detecting apnea in 9 infants who were being monitored on apnea alarm systems, in 6 of 9 cases the pneumogram recordings revealed 2 to 3 times as many episodes of significant apnea than were detected by the nursing staff. Although the technique does not improve on-line, real-time monitoring, is of little value in situations where immediate medical intervention is indicated, and is subject to the artifacts of motion and lead failure of conventional impedance monitoring, the information derived from these recordings permitted a more accurate diagnosis of apnea. (8 refs.)

Clinical Data, Inc. 358 Chestnut Hill Avenue Boston, Massachusetts 02146 1238 UAUY, RICARDO; *SHAPIRO, DONALD L.; SMITH, BARBARA; & WARSHAW, JOSEPH B. Treatment of severe apnea in prematures with orally administered theophylline. *Pediatrics*, 55(5):595-598, 1975.

Twelve premature infants (under 2,000gm) with severe primary apnea were treated with theophylline as an alternative to mechanical ventilation. Three infants had recurrence of severe apnea following discontinuation of the drug and required a second course of therapy. Infants requiring assisted ventilation (Ambu-bag) on 2 or more occasions within 24 hours received anhydrous theophylline (5mg/cc) in a 20 percent alcohol solution in a dose of 4mg/kg every 6 hours orally; the dose was reduced to 3mg/kg if the heart rate rose over 180 beats per minute and was discontinued in the event of a heart rate over 200 beats per minute. Full dosage was administered for 6 days and was then tapered for 4 days to complete a 10-day course. Theophylline significantly (p<.005) reduced the mean daily number and the severity of apneic episodes, obviated the need for assisted ventilation, and reduced the potential risk of hypoxia. A rise in heart rate from an average of 152.5 to 167.5 beats per minute while on theophylline was the only significant (p=.001) side effect observed. (12 refs.)

*Department of Pediatrics 333 Cedar Street New Haven, Connecticut 06510

1239 SHANNON, DANIEL C.; GOTAY, FELI-CITA; STEIN, ISRAEL M.; ROGERS, MARK C.; TODRES, I. DAVID; & MOYLAN, FERGUS M. B. Prevention of apnea and bradycardia in low-birthweight infants. *Pediatrics*, 55(5):589-594, 1975.

The usefulness of theophylline in treating apnea was evaluated in 17 low birth weight (950-2,420gm) infants presenting with severe apnea in the first weeks of life. Apnea was detected and accurately quantified by 13-hour pneumogram recordings and correlated with serum theophylline levels. Nursing observations coupled with on-line alarm systems detected only 39 percent of severe apneic episodes as compared to the pneumogram recording technique. While the serum theophylline level associated with toxicity-free control of apnea was uniform, the dose

required to achieve that level varied from 1.5 to 4.0mg/kg every 6 hours. A similar degree of variability (9.2 to $32\mu g/ml$) was seen in the serum level in infants receiving the same dose (4.0mg/kg). In all 17 infants, apnea was well controlled at serum levels exceeding $6.6\mu g/ml$, regardless of evidence for toxicity. These findings and the data in the literature emphasize the importance of measuring serum theophylline as well as quantitating the frequency of apnea by direct recording so that each infant receives the appropriate therapeutic dose. The initial dose should be 2 to 3mg/kg every 6 hours, adjusted according to objectively quantified apnea and serum theophylline concentration. (10 refs.)

Children's Service Massachusetts General Hospital Boston, Massachusetts 02114

1240 LUCEY, JEROLD F. The xanthine treatment of apnea of prematurity. *Pediatrics*, 55(5):584-586, 1975.

In the face of clearcut evidence that xanthines are effective in the treatment or prevention of apnea of prematurity, the specifics of their administration and the overall risks and gains of therapy must be studied. Xanthines should be investigated for possible unexpected toxicities in this age group, correct dosage, optimal route of administration, and long-term effects in humans. The possible risks of therapy must be balanced carefully against the probable benefits to be derived from preventing or treating apnea. Aminophylline may not change the prognosis in cases in which apnea is considered an early sign of severe brain damage, but treatment should be valuable if apnea and the subsequent hypoxia produced can cause brain damage. In apnea, the xanthines change the sensitivity of the medullary respiratory center to CO2. Thus, they have potential therapeutic implications for Ondine's Curse, the Pickwickian syndrome, the adenoidal hypertrophy-cor pulmonale syndrome, and perhaps even the sudden infant death syndrome, conditions which may be due to CO2 sensitivity. (14 refs.)

1241 RIGATTO, HENRIQUE; BRADY, JUNE P.; & DE LA TORRE VERDUZCO, RAFAEL. Chemoreceptor reflexes in preterm infants: I. The effect of gestational

and postnatal age on the ventilatory response to inhalation of 100% and 15% oxygen. *Pediatrics*, 55(5):604-613, 1975.

Sixteen "healthy" preterm infants (birthweight 1,000 to 2,000gm) were studied 94 times during the first month of life, during which 9 infants breathed air followed by 100 percent oxygen for 2 and 5 minutes, respectively (63 studies) and 7 infants breathed 21 percent, 15 percent, and then 21 percent oxygen for 5 minutes each (31 studies). Respiratory minute volume and frequency, tidal volume, heart rate, and alveolar PCO2 and PO2 were measured during control periods and during administration of 100 percent and 15 percent oxygen. The magnitude of the immediate change in ventilation during 100 percent and 15 percent oxygen breathing was used to test peripheral chemoreceptor function. The immediate decrease in ventilation with 100 percent oxygen and the immediate increase in ventilation with 15 percent oxygen were statistically similar at different gestational and postnatal ages. However, while the late increase in ventilation (5 minutes) with 100 percent oxygen was also similar at different ages, the late decrease in ventilation with 15 percent oxygen was not present at 18 days of age. The findings indicate that preterm infants have very active peripheral chemorecptors as early as 28 weeks of gestation and that these infants are able to sustain hyperventilation with mild hypoxia by 3 weeks of age. (15 refs.)

Department of Pediatrics Women's Centre 700 William Avenue Winnipeg, Manitoba, R3E 0Z3 Canada 1242 RIGATTO, HENRIQUE; BRADY, JUNE P.; & DE LA TORRE VERDUZCO, RAFAEL. Chemoreceptor reflexes in preterm infants: II. The effect of gestational and postnatal age on the ventilatory response to inhaled carbon dioxide. *Pediat*rics, 55(5):614-620, 1975.

The ventilatory response to inhaled carbon dioxide at different gestational and postnatal ages was measured in 58 studies in 9 "healthy" preterm infants (birthweight 1,000 to 2,000gm). Respiratory minute and tidal volumes, frequency, heart rate, and alveolar PCO2 and PO2 were determined, and ventilation was measured with a nosepiece and a screen flowmeter, using a constant flowthrough to eliminate valves and reduce dead space. Almost all measurements were made during the fifth minute that the infants breathed air and 2 percent and 4 percent carbon dioxide in air. The slope of the carbon dioxide response increased 42 percent from 32 to 37 weeks' gestation (p<.05) and 62 percent from 2 to 27 days of age (p<.025). The intercept at .3 liter/min/kg was the same at different gestational ages, but was significantly greater at 2 as compared with 27 days of age (p<.05). The findings indicate that the respiratory system is depressed both at 32 weeks' gestational age and soon after birth. Decreased ventilatory response to carbon dioxide with gestational age is perhaps primarily central; with postnatal age it is possibly related to mechanical abnormalities of the lung. (14 refs.)

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MEDICAL ASPECTS — Etiologic Groupings Respiratory disorders

1243 GOLDENBERG, ROBERT L.; & NEL-SON, KATHLEEN. latrogenic respiratory distress syndrome. American Journal of Obstetrics and Gynecology, 123(6):617-620, 1975.

A retrospective study of 100 consecutive cases of infants who developed respiratory distress syn-

drome (RDS) indicated that a major factor leading to RDS was misjudgment of the actual gestational age by the physician. Untimely or unwarranted medical intervention in the pregnancy was responsible for 15 percent of the cases and may have accounted for another 18 percent. Recommendations for prevention of "jatrogenic" RDS include the performance of either a pulmonary

maturity study or a mature biparietal diameter study demonstrated by ultrasound prior to every elective repeat cesarean section and elective induction of labor. If any doubt exists concerning the infant's maturity following one or both of these assessments, the spontaneous onset of labor should be awaited. (22 refs.)

Yale University School of Medicine Department of Obstetrics and Gynecology 333 Cedar Street New Haven, Connecticut 06510

1244 LEVY, DAVID E.; BRIERLEY, JAMES B.; SILVERMAN, DAVID G.; & PLUM, FRED. Brief hypoxia-ischemia initially damages cerebral neurons. Archives of Neurology, 32(7):450-456, 1975.

Brief hypoxia-ischemia damaged cerebral neurons before damaging cerebral blood vessels in rats. Neuronal, but not vascular, damage was produced by 10 or more minutes of unilateral carotid artery occlusion, combined with systemic hypoxemia (arterial pressure of oxygen, 21mms of mercury) in the ipsilateral cerebral hemispheres of 18 of 29 rats (62 percent). No visible neuronal abnormalities were suffered by rats exposed to 2- and 5-min stresses. More widespread damage was caused by longer exposures, and after prolonged survival neuronal loss and gliomesodermal reaction were evident. Early neuronal changes were related to motor abnormalities. Vascular no-reflow developed in only 1 of 24 animals after 20 and 30mins of hypoxia-ischemia, sometimes despite extensive neuronal damage. The observed production of neuronal and neurological abnormalities in the absence of hypotension or vascular no-reflow is evidence that hypoxia-ischemia initially damaged cerebral neurons. (21 refs.)

Department of Neurology New York Hospital-Cornell Medical Center 525 E. 68th Street New York, New York 10021

*GRAHAM, GEORGE G.; **REDDING, RALPH A.; & PEREIRA, CELINA. Another view of data on serum thyroxine in RDS. Pediatrics, 56(3):486, 1975. (Letter)

Graham contends that possible differences in mean gestational age and/or intrauterine malnutrition

could account for the Redding and Pereira finding of lower mean serum thyroxine levels in a group of premature infants with respiratory distress syndrome (RDS) than in a group of prematures "comparable by gestational age" who did not develop RDS. Redding and Pereira reply that there were no statistical differences between groups in mean estimated age at 2 intervals of assessment. Mean weight and length data of babies at 2 comparable age intervals of prematurity indicated no significant difference at the 30 to 33 week interval. But at the 34 to 37 week interval, prematures with RDS were significantly heavier and longer than their counterparts without RDS. Thus, intrauterine nutrition, as estimated by birthweight or length, could not have caused the lower serum thyroxine values in the RDS group of babies. (3 refs.)

*Department of Pediatrics Johns Hopkins University School of Medicine Baltimore, Maryland

**Memorial Hospital Pawtucket, Rhode Island 02860

1246 KUHNS, LAWRENCE R.; BEDNAREK, FRANCIS J.; WYMAN, MICHAEL L.; ROLOFF, DIETRICH W.; & BORER, ROBERT C. Diagnosis of pneumothorax or pneumomediastinum in the neonate by transillumination. *Pediatrics*, 56(3):355-360, 1975.

high-intensity transilluminating light (The Mini-Light Portable Illuminator) was successfully used as a diagnostic aid to detect the presence of pneumothorax (PT) or pneumomediastinum (PM) in the newborn infant. Physical findings in these conditions are often so subtle that diagnosis depends largely on anteroposterior and cross-table lateral chest radiographs. In 52 examinations, no PM or PT was missed by transillumination; however, minimal PM or PT was indicated by transillumination in 2 cases where radiographs revealed no evidence of PM or PT. No false indications of moderate-to-severe PM or PT resulted from transillumination. The false positive findings of minimal PM or PT suggest that radiographs should be obtained after the diagnosis of minimal PM or PT by transillumination and before further action is taken. The detection of

sudden, life-threatening PTs or PMs which require immediate therapy is the principal benefit of transillumination. (7 refs.)

Division of Pediatric Radiology C. S. Mott Children's Hospital University of Michigan Medical Center Ann Arbor, Michigan 48104

1247 SAVAGE, M. O.; WILKINSON, A. R.; *BAUM, J. D.; & ROBERTON, N.R.C. Frusemide in respiratory distress syndrome. Archives of Disease in Childhood, 50(9):709-713, 1975.

The effects of frusemide on blood gas tensions and fluid and electrolyte balance were studied in premature infants with severe respiratory distress syndrome (RDS) during the first 24 hours of life, and results were compared with similar measurements on infants of comparable gestational age and birthweight with less severe RDS who did not receive the diuretic. The treated group exhibited a 4-fold increase in urinary volume and a 10-fold increase in urinary sodium and urinary calcium excretion when compared with controls. No improvement in blood gas tensions was observed. The potential of frusemide for causing serious dehydration with no associated improvement in blood gas tensions suggests that it should not be used in the routine treatment of infants with RDS. (5 refs.)

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1248 BANNISTER, D. G.; & HAINES, C. I. Continuous positive airway pressure by facemask in newborn infants. *British Medical Journal*, 4(5999):758, 1975. (Letter)

Continuous positive airway pressure administered to a rapidly deteriorating infant with severe respiratory distress syndrome using a black rubber oxygen funnel proved to be safe and effective. The funnel produced an excellent seal, and the procedure was managed easily by nursing staff unfamiliar with intensive neonatal care.

Bromsgrove General Hospital Bromsgrove, Worcester, England 1249 ALLEN, L. P.; BLAKE, A. M.; DURBIN, G. M.; INGRAM, D.; REYNOLDS, E.O.R.; & WIMBERLEY, P. D. Continuous positive airway pressure and mechanical ventilation by facemask in newborn infants. British Medical Journal, 4(5989):137-139, 1975.

Twenty-four infants (median birth weight, 1,096g; median gestational age, 29 weeks) were treated with mask continuous positive airway pressure (CPAP; 20 infants) or mechanical ventilation delivered through a facemask (11 infants) over a 9-month period. The mask was held in place with minimum trauma and distortion of the head; the pressure holding the mask against the face was evenly distributed around the head, and the mask could be quickly placed in position or removed. Nineteen infants were suffering from hyaline membrane disease, 10 from apnea due to inadequate control of breathing, and 2 were hydropic from rhesus hemolytic disease. Twentyone of the infants survived. Complications during treatment were few. The method of holding the facemask on was simple and effective. This technique may have advantages over other methods of applying CPAP or mechanical ventilation to infants with mild respiratory distress and should be useful in avoiding endotracheal intubation or in reducing the length of time required to intubate infants with more serious illnesses. (16 refs.)

University College Hospital London WC1, England

1250 TURNER, T,; EVANS, J.; & BROWN, J. K. Monoparesis: complication of constant positive airways pressure. Archives of Disease in Childhood, 50(2):128-129, 1975.

Two infants with idiopathic respiratory distress syndrome who appeared to be progressing satisfactorily after receiving constant positive airways pressure (CPAP) developed acute but transient Erb's palsies following application of the neck seal of a head box which was delivering CPAP with pressures not exceeding 10cm H₂O. Root ischemia probably resulted from pressure from the neck seal. Neither infant had a Horner's syndrome, and both were otherwise neurologically intact. The first infant showed a complete conduction block and then recovery with no evidence of denervation or loss of continuity of axons. The second infant

showed patchy fibrillation in biceps suggesting denervation, but only 5 days after first application of the neck seal. He also made a complete neurological recovery. There was no evidence to support birth trauma rather than the neck seal as the cause. (5 refs.)

Department of Child Life and Health University of Edinburgh 17 Hatton Place Edinburgh EH9 1UW, England

1251 YU, V.Y.H.; LIEW, S. W.; & ROBERTON, N.R.C. Pneumothorax in the newborn; changing pattern. Archives of Disease in Childhood, 50(6):449-453, 1975.

The increasing importance of pneumothorax and related conditions as complications of hyaline membrane disease (HMD) in preterm infants is pointed out, and the occurrence of pneumothorax and pneumomediastinum was studied in 34 newborn infants. An overall incidence of 3 per 1,000 live births was found over a 21/2-year period. Eleven term infants without obvious pathology presented early, 9 within minutes after birth. Twenty-three cases of pneumothorax were seen in preterm infants with HMD, presenting a mean of 45 hours after birth. Nine of the 11 term infants survived after conservative treatment. Intrapleural drainage was required in 14 of 16 preterm infants with pneumothorax as a complication of HMD. Seven of 9 infants with persistent or recurring pneumothorax had been receiving continuous distending pressure or intermittent positive pressure ventilation at time of onset. Five deaths occurred in preterm infants with HMD, with 3 mortalities resulting directly from respiratory failure. Prompt diagnosis and treatment of pneumothorax is important in successful management. (22 refs.)

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1252 KENISTON, RICHARD C.; PERNOLL, M.
L.; BUIST, NEIL R. M.; LYON, MARY; &
SWANSON, J. ROBERT. A prospective
evaluation of the lecithin/sphingomyelin
ratio and the rapid surfactant test in

relation to fetal pulmonary maturity. American Journal of Obstetrics and Gynecology, 121(3):324-332, 1975.

The rapid surfactant test (RST) and lecithin/sphingomyelin (L/S) ratios obtained by planimetric and densitometric methods were compared prospectively in relation to fetal pulmonary maturity as determined in 578 amniotic fluid samples obtained over a 2.5-year period. Both the planimetric and densitometric L/S ratios correlated positively in a highly significant manner with the RST. The RST and densitometric L/S ratio were reliable in predicting fetal lung maturity (99 percent and 100 percent, respectively). The RST was the most reliable test for determining fetal lung immaturity (69 percent). The RST is much easier to perform than the L/S ratio. In cases with blood or meconium contamination, the densitometric L/S may be used to provide a further estimate of fetal maturity. When the RST is intermediate, the densitometric L/S can be used to differentiate the possibly immature fetus from the likely mature fetus. (29 refs.)

Division of Perinatal Medicine University of Oregon Medical School Portland, Oregon 97201

1253 BUHI, W. C.; & SPELLACY, W. N. Effects of blood or meconium on the determination of the amniotic fluid lecithin/sphingomyelin ratio. American Journal of Obstetrics and Gynecology, 121(3):321-323, 1975.

Increasing amounts of maternal and fetal serum were added to mature (lecithin/sphingomyelin [L/S] ratio greater than 2.0) and immature (original low L/S ratio) amniotic fluids. Concentrated meconium was also added to a mature amniotic fluid. The mean maternal serum L/S ratio was 1.46, and the mean fetal serum ratio, 1.31. Additions of increasing amounts of serum (maternal on fetal) to mature and immature amniotic fluids caused a decrease and an increase, respectively, in the L/S ratio, the extent of the alteration depending upon the volume of serum added. Addition of meconium decreased the L/S ratio. The findings indicate that the effects of a bloody tap are dependent upon both the initial level of the L/S ratio and the amount of blood contamination. (9 refs.)

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1254 MORENS, DAVID M.; SOYKA, LESTER F.; NEESE, ALLEN L.; SHANNON, DANIEL C.; & SHAPIRO, DONALD L. The use of xanthines in treating apnea of prematurity. *Pediatrics*, 56(4):617-619, 1975. (Letters)

Some potential hazards of the use of xanthines in the treatment of apnea of prematurity have gone unnoted in previous articles on this type of therapy. Xanthines are notorious gastrointestinal irritants, and their enteral administration necessitates careful monitoring of infants for evidence of alimentary tract pathology. Gastric and especially jejunal feeding tubes should be used cautiously. Xanthines should not be administered through umbilical vessel catheters, especially rapidly. Potential hazards of rectal xanthine administration exist, although erratic absorption may be produced only when suppositories are used. Intravenous administration is sometimes considered the method of choice, yet even this route poses theoretical dangers relevant to the marked stimulation of gastric secretions by the introduced xanthines, and acute severe toxicity in both children and adults has been linked to intravenous administration. Xanthines are also potentially toxic in the kidney and ductus arteriosus, but toxic manifestations did not materialize during the treatment of 93 infants in one study. Theophylline should be employed with extreme care pending further studies on its long-term side effects. (21 refs.)

Department of Pediatrics University of Michigan Medical Center Mott Children's Hospital Ann Arbor, Michigan 48104

1255 PLATZKER, ARNOLD C. G.; KITTER-MAN, JOSEPH A.; MESCHER, E. JOSEPH; CLEMENTS, JOHN A.; & TOOLEY, WILLIAM H. Surfactant in the lung and tracheal fluid of the fetal lamb and acceleration of its appearance by dexamethasone. *Pediatrics*, 56(4):554-561, 1975.

Tracheal fluid production and pulmonary surfactant flux were studied in 12 sets of twin fetal lambs (102 to 135 days' gestation) in pregnant ewes of several breeds, and surfactant flux and the concentration of saturated lecithin in the lungs were measured before and during dexamethasone

infusion into one of the twins in each of 9 sets. Tracheal fluid flow rates increased during gestation in both groups of fetuses between days 103 and 129. Relative to body weight, the tracheal fluid flow rate had a mean of 3.2ml/kg/hr (SD 1.6). The flux of surfactant in the tracheal fluid of control fetuses, detectable between 108 and 130 days' gestation, increased slowly with advancing gestation but remained less than 150µg/kg/hr at day 135. Dexamethasone treatment accelerated the appearance of surfactant in tracheal fluid at 108 days; the flux for treated fetuses was 10 times that of age-matched control fetuses by 129 days' gestation and reached the high levels found for control animals at 145 days' gestation by day 135. Total disaturated lecithin synthesis rate relative to body weight increased about 30-fold from day 108 to 135 in control animals, while secretion increased about 40-fold. Dexamethasone increased the rate of disaturated lecithin secretion throughout the study. (38 refs.)

Specialized Center of Research in Pulmonary Diseases Cardiovascular Research Institute University of California San Francisco, California

1256 VIDYASAGAR, DHARMAPURI; YEH, T. F.; HARRIS, V.; & PILDES, ROSITA S. Assisted ventilation in infants with meconium aspiration syndrome. *Pediatrics*, 56(2):208-213, 1975.

Thirty-two cases of infants born with meconium staining over an 18-month period who met 2 of the 3 criteria for the diagnosis of meconium aspiration syndrome (MAS) (history of meconium in the oropharynx or tracheo-bronchial tree, clinical evidence of respiratory distress, and radiologic evidence of aspiration pneumonitis) were analyzed retrospectively. Assisted ventilation was initiated in MAS by 12 hours of life. Subsequent to initiation, 6 infants survived and 11 (64.7 percent) died, all before 24 to 48 hours of age. The differences in the response of the infants subsequent to ventilation among survivors and nonsurvivors were striking. While the A-a gradient of surviving infants decreased significantly, the nonsurvivors had a persistently high A-a gradient, suggestive of further deterioration even after assisted ventilation. Nonsurvivors had a higher incidence of massive atelectasis. The presence of

an air leak did not alter the final outcome. Intrapartum monitoring may help in improving morbidity and mortality from MAS. (10 refs.)

Department of Pediatrics University of Illinois Hospital 840 South Wood Street Chicago, Illinois 60612

1257 PUROHIT, DILIP M.; MAISELS, M. JEFFREY; & VARANO, LOTTIE A. Pneumopericardium. Pediatrics, 56(2):341-342, 1975. (Letters)

The idea that, in hyaline membrane disease, a decrease in diastolic filling of the neonatal heart may decrease intrapericardial pressure and thus create a pressure gradient which encourages the development of pneumopericardium is an intriguing one. Diastolic filling could be diminished by the cumulative positive end-expiratory pressure (PEEP) obtained by adding PEEP to intermittent positive pressure ventilation (IPPV) with fast rates. However, the lung compliance in severe hyaline membrane disease is so low that intrathoracic pressure increases by only 20 percent of the applied airway pressure. Therefore, venous return and diastolic filling (and, thus, cardiac output) should not be diminished significantly. This is confirmed by the absence of changes in arterial blood pressure and heart rate when assisted ventilation with continuous positive airway pressure (CPAP) is initially instituted. (4 refs.)

Medical University of South Carolina Charleston, South Carolina 29401

1258 FOX, WILLIAM W.; BERMAN, LAW-RENCE S.; DOWNES, JOHN J., JR.; & PECKHAM, GEORGE J. The therapeutic application of end-expiratory pressure in the meconium aspiration syndrome. *Pediatrics*, 56(2):214-217, 1975.

The effectiveness of end-expiratory pressure (EEP) in relieving hypoxemia in the meconium aspiration syndrome (MAS) was studied in 14 patients weighing 2,400 to 4,500gm. EEP was employed in a range of 1 to 14cm H₂O with positive end-expiratory pressure (PEEP) or without continuous positive airway pressure (CPAP) mechanical ventilation. Ten of the 14 patients survived. Optimal response of PO₂ to EEP change was

demonstrated in the low (1 to 3cm H₂O) and middle (4 to 7cm H₂O) ranges of applied EEP, while a decline in PO₂ responsiveness was noted at the higher levels of pressure. The mode of ventilation did not significantly affect the response of PO₂ to EEP. Nine pneumothoraces developed in 7 of the 14 patients during the course of their illness: 3 during spontaneous breathing without EEP, 1 during spontaneous unassisted breathing with CPAP, and 5 during mechanical ventilation with PEEP. Thus, EEP was not considered an important contributing factor. (22 refs.)

Division of Infant Intensive Care Children's Hospital of Philadelphia 1 Children's Center 34th and Civic Center Boulevard Philadelphia, Pennsylvania 19104

1259 BOROS, STEPHEN J.; & REYNOLDS, JOHN W. Hyaline membrane disease treated with early nasal end-expiratory pressure: one year's experience. *Pediatrics*, 56(2):218-223, 1975.

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During a 12-month period, 69 percent of 119 infants with hyaline membrane disease (HMD) hospitalized in an intensive care unit were treated initially with nasal end-expiratory pressure (NEEP). The mean age at which NEEP therapy was started was 12.2 hours. In the NEEP treatment group, 57 infants (82.6 percent) survived, and 54 (78.3 percent) required no other respiratory assistance. Of 15 infants considered NEEP failures, only 3 (20 percent) survived. Among the 69 infants treated with NEEP, there were 2 pneumothoraces in the 54 infants treated with NEEP alone (4 percent) and 4 penumothoraces after starting continuous positive-pressure breathing (CPPB) in the 15 NEEP failures (27 percent). Eighteen of the 36 children (50 percent) with HMD treated with CPPB directly died; 7 of the 36 (19.4 percent) developed pneumothoraces. Fourteen infants received no respiratory assistance other than warmed humidified oxygen mixtures; all but 1 survived. Since the advent of the early application of modest amounts of end-expiratory pressure by nasopharyngeal tube, a significant increase has been noted in the survival of infants with HMD weighing between 1,501 and 2,000gm. The simplicity and ready availability of NEEP make the routine endotracheal intubation of infants requiring only continuous airway distending pressure no longer justifiable. (14 refs.)

1260 VAN CAILLIE, MICHELINE; & POWELL, GERALDINE K. Nasoduodenal versus nasogastric feeding in the very low birthweight infant. *Pediatrics*, 56(6):1065-1072, 1975.

The comparative practicality, effectiveness, and safety of feeding very low birth weight infants (less than 1,300gm) by continuous nasoduodenal infusion and continuous nasogastric feeding were assessed with 2 matched groups of very low birth weight infants fed the same commercial formula by continuous drip, through either a nasogastric or nasoduodenal tube. The average enteral caloric intake was 131cal/kg/day for infants with nasoduodenal tubes vs. 106cal/kg/day for Ss with nasogastric tubes. A caloric intake of 120cal/kg/day could be reached within 48 to 72 hours after tube placement in the nasoduodenal group but only after a week in the nasogastric group. The average daily weight gain for the overall period of study was 16gm/day for the nasoduodenal group as compared with 10gm/day for the nasogastric group (p=.05). Nasoduodenal feeding was attended by fewer complications and a much lower mortality rate than that seen in a study with the most comparable weight gain (parenteral alimentation). (20 refs.)

Department of Pediatrics University of Texas Medical Branch Galveston, Texas 77550

1261 ADLER, SAUL M.; & WYSZOGRODSKI, ISSIE. Pneumothorax as a function of gestational age: clinical and experimental studies. Journal of Pediatrics, 87(5):771-775, 1975.

The finding that pneumothorax (PT) and pneumomediastinum (PM) are a more frequent complication of respiratory distress syndrome (RDS) in the more mature infant was probed through an investigation of the relationship between gestational age and the likelihood of rupture of the fetal rabbit lung. On the basis of retrospective analysis of clinical data of a consecutively delivered population of infants with RDS, 8 radiologically confirmed cases of RDS with spontaneous PT and/or PM were found among 456 patients weighing less than 2,500gm and of less than 36 weeks' gestational age. The tendency was for an increase in incidence with increasing birth weight. A larger number of rabbit lungs studied showed a

statistically significant relationship of the same sort seen in the infants. Studies of pressure-volume relationships of lungs postmortem indicated a relative resistance to pulmonary rupture in the most immature group of lungs, owing to high surface forces. Towards term, however, surface forces were decreased, as were lung tissue elastic forces, which predisposed to rupture at lower pressures. The clinical relevance of the finding of rupture at lower pressures in more mature lungs is to suspect PT and/or PM in any infant whose course suddenly changes, and especially in larger infants. (10 refs.)

Department of Pediatrics University of South Florida Tampa General Hospital Tampa, Florida

1262 BOROS, STEPHEN J.; THOMPSON, THEODORE R.; REYNOLDS, JOHN W.; JARVIS, CHARLES W.; & WILLIAMS, HUGH J. Reduced thrombus formation with silicone elastomere (Silastic) umbilical artery catheters. *Pediatrics*, 56(6):981-986, 1975.

Among 20 newborn infants who had umbilical artery catheters inserted because of respiratory distress requiring high oxygen concentrations and frequent blood gas monitoring, 10 patients received polyvinyl chloride (PVC) catheters, and 10 similar patients received radiopaque silicone elastomere (Silastic) catheters, all positioned at the aortic bifurcation. Aortograms performed at the time of catheter removal revealed radiographic evidence of arterial thrombosis (a large mural thrombus observed adjacent to the catheter on the aortic wall) in only 1 of the patients with indwelling Silastic catheters, while 9 patients with PVC catheters had distinct evidence of catheterrelated thrombus formation. None of 5 additional infants who died with indwelling Silastic umbilical artery catheters in place had evidence of thrombus formation at autopsy. Preliminary experience with radiopaque silicone elastomere tubing demonstrates that it can be used as an umbilical artery catheter and that it appears to be less thrombogenic than the standard PVC tubing currently in general use. (23 refs.)

Children's Hospital 311 Pleasant Avenue St. Paul, Minnesota 55102 1263 GENNSER, GERHARD; MARSAL, KAREL; & BRANTMARK, BO. Maternal smoking and fetal breathing movements. American Journal of Obstetrics and Gynecology, 123(8):861-867, 1975.

To determine the effect of maternal smoking on fetal breathing movements and the role of nicotine in this response, 12 regular smokers were studied during the last trimester of pregnancy when smoking a standard cigarette, smoking a nontobacco cigarette, or chewing a piece of chewing gum containing 2 or 4mg nicotine. The 2 nicotine-containing gums increased the blood nicotine to 2 different dose-related levels, the non-tobacco cigarette raised the percentage of carboxyhemogiobin, and the standard cigarette increased both variables. Nicotine increased the maternal heart rate when taken in both cigarette smoke and high dose chewing gum. A significant increase of apnea and periodic breathing movements in the fetus followed smoking the standard cigarette, and similar (but nonsignificant) changes occurred in a dose-related way after nicotine chewing gum. Nicotine appears to be partly responsible for the transient reduction of fetal breathing movements after smoking. Findings may relate to the influence of maternal smoking on procedures for assessing fetal maturity. (36 refs.)

Department of Obstetrics and Gynecology Allmanna Sjukhuset S-21401 Malmo, Sweden

1264 GAZIANO, EMANUEL P.; HILL, DAVID L.; & *FREEMAN, DONALD W. The oxytocin challenge test in the management of high-risk pregnancies. American Journal of Obstetrics and Gynecology, 121(7):947-950, 1975.

Clinical experience with the oxytocin challenge test (OCT) in 72 patients at risk for intrauterine asphyxia indicates that a positive test appears to correlate meaningfully with other clinical parameters which reflect intrauterine compromise. A repetitive late deceleration pattern following oxytocin-induced uterine contractions may indicate fetal compromise, while absence of this pattern may indicate fetal well-being. Eighty-one satisfactory OCTs were administered, with 8 interpreted as positive, 72 as negative, and 1 as suspicious. No prepartum or intrapartum deaths occurred in the 64 patients with negative tests.

Intrapartum fetal distress and late decelerations were observed in 1 patient 8 days after a negative test, and she was delivered by cesarean section. All patients with positive tests exhibited other findings suggestive of intrauterine fetal compromise, and cesarean section was performed. (5 refs.)

*Department of Obstetrics and Gynecology Hennepin County General Hospital Fifth and Portland Minneapolis, Minnesota 55415

1265 CROSBY, WARREN. Fetal respiratory distress following fetography. A case report. American Journal of Obstetrics and Gynecology, 121(7):958-960, 1975.

A report of a rare and unexpected complication of fetography suggests that the disadvantages may outweigh any diagnostic advantage. Fetography is a technique which uses oil-soluble contrast medium to outline the fetal skin; it has been used to outline small fetuses prior to transfusion in the early middle trimester when fetal bones are poorly calcified. A fetus who required 3 exchange transfusions aspirated the dye (Lipiodol 28 percent) and suffered severe respiratory distress after birth. Antibiotics and corticosteroids were used, but the lungs cleared slowly. When he was discharged at 5 weeks old, some infiltrate remained in the lower lungs; some radiopaque infiltrate was observed in the perihylar lymph nodes at 6 months old. The only possible indication for fetography is to ascertain the presence of conjoined twins, but fetography is not recommended for all twins. (5 refs.)

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1266 BROWN, EDWIN G.; KROUSKOP, W.; MCDONNELL, FRANCIS E.; & SWEET, AVRON Y. Blood volume and blood pressure in infants with respiratory distress. *Journal of Pediatrics*, 87(6, part 2):1133-1138, 1975.

The relationship between blood volume and blood pressure in infants with respiratory distress syndrome (RDS) was studied in 17 true premature infants. Of the 17, 7 were considered to have Type

I RDS (hyaline membrane disease), and 10 had Type II RDS (transient tachypnea of the newborn). Infants with Type I RDS had significantly lower blood volume than infants with Type II RDS, the difference being due to a low red cell volume. All infants had mean aortic blood pressure within the normal range. Abnormalities of blood volume in infants with Type I RDS may represent the early phase of shock; if it persists or progresses, underperfused organs will be further compromised, and death may ensue. However, blood pressure cannot be used as a clinical guide, because normal blood pressure does not indicate normal blood volume or circulation in infants with RDS. (41 refs.)

Mount Sinai Medical Center Fifth Avenue and 100th St. New York, New York 10029

1267 BERGMAN, ABRAHAM B.; BECKWITH, J. BRUCE; & RAY, C. GEORGE. The apnea monitor business. *Pediatrics*, 56(1):1-3, 1975.

With increased attention being given to sudden infant death syndrome (SIDS) in professional as well as lay circles, there is a risk that the public may be deluged with information indicating, on the basis of preliminary and inconclusive evidence, that SIDS can be prevented through the use of home monitors. Until sufficient evidence is available, the use of home monitors should be limited to research projects or to infants with specific neurologic or cardiorespiratory disorders in which monitors are of demonstrated value. A safe, reliable, inexpensive instrument with acceptable sensitivity but without a high incidence of false alarms is not generally available. Before monitors are released for general home use, their adverse effects on parental behavior and family emotional health should be studied seriously. Until more is known of the nature and course of the various obstructive and nonobstructive types of sleep apnea, the possibility exists that stimulation by a monitor alarm system could have an adverse effect. (7 refs.)

Children's Orthopedic Hospital and Medical Center Box 5371 Seattle, Washington 98105 1268 TALAMO, RICHARD C. Basic and clinical aspects of the alpha₁-antitrypsin. *Pediat*rics, 56(1):91-99, 1975.

A deficiency of the major serum alpha₁-globulin, the alpha₁-antitrypsin, now enters into the differential diagnosis of various childhood diseases and is being considered as the object of possible screening programs. Measurements of alpha1antitrypsin function have been found to correlate very well with measurements of its concentration. Abnormally low levels of serum alpha, antitrypsin are found in some families with familial emphysema, other families with familial infantile cirrhosis, and an occasional family with combined pulmonary and hepatic disease during childhood. Nonfamilial causes of low levels include the respiratory distress syndrome of thh newborn and the early stages of renal homograft rejection; low levels also appear in some patients with severe end-stage liver failure. The serum alpha1-antitrypsin is inherited via a series of codominant alleles, with Pi^M (protease inhibitor) being the most common, Pi^Z the slowest-moving, and Pi^S having an electrophoretic mobility between those of Pi^M and Pi^Z. No specific treatment now exists for severe alpha₁-antitrypsin deficiency of Pi types Z or SZ. The extremely high frequency of severe deficiency (Pi type ZZ) and its close association with fatal familial diseases suggest a careful consideration of the need for, and design of, screening programs for its detection. (57 refs.)

Division of Immunology Department of Pediatrics Johns Hopkins University School of Medicine Baltimore, Maryland 21200

1269 HALL, ROBERT T.; & RHODES, PHILIP G. Pneumothorax and pneumomediastinum in infants with idiopathic respiratory distress syndrome receiving continuous positive airway pressure. *Pediatrics*, 55(4):493-496, 1975.

Fifty-five of 462 infants with idiopathic respiratory distress syndrome who developed pneumomediastinum (PM) or pneumothorax (PT) were reviewed. A 20 percent incidence of PT and/or PM was found in patients receiving continuous positive airway pressure (CPAP) as compared with an 11 percent incidence in infants not receiving this mode of therapy. PT and PM occurred at 8cm of

H₂O distending airway pressure in patients in whom oxygen requirements were diminishing. The inspired oxygen concentration in the CPAP group at the time of PM or PT was 52 percent (± S.D. 15 percent) at a mean age of 33 hours (± S.D. 23 hr). The blood gases were relatively stable in the CPAP patients in the period preceding alveolar rupture. The mechanism producing PT and PM in the patient population was probably related to alveolar overdistention, occurring as oxygen requirements were decreasing. Distending airway pressure should be lowered prior to achieving an inspired oxygen concentration of 40 percent to 60 percent. Pending the results of controlled data, it is recommended to reduce the airway pressure 1cm of H₂O for each 10 percent reduction in FiO₂, beginning with 10cm of H₂O in 100 percent FiO₂, until ambient air is achieved. This procedure weighs the potential risk of prolonging oxygen exposure against developing alveolar rupture with distending pressure at lower inspired oxygen concentrations and lower total oxygen doses. (13 refs.)

Children's Mercy Hospital 24th at Gillham Road Kansas City, Missouri 64108

1270 COWETT, RICHARD M.; & STERN, LEO. Maternal thyroid status and the incidence of respiratory distress syndrome: evaluation of a proposed relationship. *Pediatrics*, 54(4):497-499, 1975.

Ninety-three infants with a birthheight of less than 2,500gm who were born alive to normothyroxinemic mothers, 16 infants of similar weight born alive to women whose butanol-extractable idodine was in the hypothyroxinemic range irrespective of whether or not they received thyroglobulin as therapy for hypothyroxinemia, and 11 infants of similar weight born alive to women classified as hyperthyroxinemic were studied retrospectively. The clinical and/or x-ray or autopsy evidence of respiratory distress syndrome (RDS) was 11.8 percent (11 infants) in the first group, 12.5 percent (2 infants) in the second group, and 9.1 percent (1 infant) in the third group. The findings indicated that normothyroxinemic, hypothyroxinemic, and hyperthyroxinemic mothers all produced low-birthweight infants with a similar incidence of RDS. The results suggest that if the thyroid does play a role in the *in vivo* maturation of the fetal lung, the part played by the maternal thyroid is negligible, and any thyroid mediation would result from activity of the fetal thyroid itself. (14 refs.)

Providence Lying-In Hospital 50 Maude Street Providence, Rhode Island 02908

1271 BACON, GEORGE E.; GEORGE, RACHEL; KOEFF, STEVE T.; & HOWATT, WILLIAM F. Plasma corticoids in the respiratory distress syndrome and in normal infants. *Pediatrics*, 55(4):500-502, 1975.

Sixty-four plasma samples for corticoid determination were obtained from 8 infants (CA 1 to 11 days) with fatal respiratory distress syndrome (RDS), 71 plasma samples were obtained from 8 infants (CA 1 to 8 days) with RDS who survived during the period of study, and 117 samples were obtained during the 3 days following the day of birth from 41 normal full-term and 3 low birth weight infants. The median serum corticoid concentrations in the 3 groups were compared by a nonparametric statistic using χ^2 . Corticoid assays were performed by the competitive proteinbinding method of Murphy. The median corticoid concentration in Ss with fatal RDS was substantially greater than in the other groups. The level of surviving RDS infants (5.7µg/100ml) was only 1.9µg/100ml higher than that of the normal controls (3.8µg/100ml), but the difference was statistically significant. Mode of delivery did not significantly affect the medians for either RDS group. A strong relationship between corticoids and acid-base measurements could not be shown in most infants studied. The findings suggest that infants are able to respond to severe physical stress in the neonatal period with an appropriate rise in plasma corticoid concentration, but lesser degrees of illness may cause only minimal changes in corticoid levels. (14 refs.)

Department of Pediatrics University of Michigan Medical Center Ann Arbor, Michigan 48104

MEDICAL ASPECTS — Etiologic Groupings Miscellany

1272 TROMPETER, R.; YU, V.Y.H.; AYN-SLEY-GREEN, A.; & ROBERTON, N.R.C. Massive pulmonary haemorrhage in the newborn infant. Archives of Disease in Childhood, 50(2):123-127, 1975.

Six critically ill newborn infants with massive pulmonary hemorrhage were treated with elective intermittent positive pressure ventilation early in the course of the disease, in combination with vigorous correction of pH, anemia, and hypovolemia by intravenous alkali and blood transfusion. The infants were suffering from a variety of conditions, including intrapartum asphyxia, hyaline membrane disease, hypothermia, and blood coagulation defect, which could precipitate left ventricular failure and hemorrhagic pulmonary edema. Massive pulmonary hemorrhage was seen in the first few hours of life in 2 infants who had suffered severe intrapartum asphyxia and much later (39-149 hours) in 4 low birth weight infants with severe preexisting lung disease. Using this approach, it was possible to resuscitate 4 infants following their massive pulmonary hemorrhage. Two of these infants subsequently died, but not as the result of pulmonary disease. (10 refs.)

Department of Paediatrics University of Oxford John Radcliffe Hospital Headington, Oxford OX3 9DU England 1273 MCWEENY, PATRICIA M.; & *EMERY, J. L. Unexpected postneonatal deaths (cot deaths) due to recognizable disease. Archives of Disease in Childhood, 50(3):191-196, 1975.

Based on necropsy findings, there are 4 classes of infants who suffer cot deaths (sudden infant death): children of gross congenital deformities with long-standing disease; children with a definite disease state; children with diseases not usually mortal; and children showing no features of acute disease. Interviews with parents of 25 babies who died unexpectedly at home indicated that disease symptoms did not differ from symptoms noted in a group of age-matched control children who were successfully treated. In the 3 weeks before the death of each index case or hospital admission of each control case, vomiting, diarrhea, coughing, and poor feeding were present equally in both groups. Had the parents of children who died used the services available to them (as did controls), most of the children probably would have survived. Factors which led to death from recognizable diseases included: 1) the inability of some parents to recognize important symptoms; 2) negative family attitudes toward health services; 3) the amount of effort required to obtain general medical services in some areas; and 4) the failure of some physicians to recognize severe illness. While general medical progress of control babies was similar to that of cot death babies, a large proportion of the dying babies were below the twenty-fifth percentile for weight. (8 refs.)

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DEVELOPMENTAL ASPECTS - Physical

1274 CARDOZO, CAROL W.; & ALLEN, ROBERT M. Contribution of visual perceptual maturation to the ability to conserve. American Journal of Mental Deficiency, 79(6):701-704, 1975.

The Developmental Test of Visual Perception and the Concept Assessment Conservation Test (KIT) were administered to 90 EMR and non-MR children to determine the extent to which visual perceptual maturity contributes to intellectual efficiency. Visual perceptual ability and conservational ability were positively correlated; children with more mature visual perceptual processes were better able to conserve. Performance of EMR subjects was little different from that of MA-matched non-MR children. Older CA-matched non-MR children were superior to both other groups. When levels of visual perceptual maturity were equal. MR children did not perform as well on the KIT as their MA-matched non-MR peers. Neither visual perception, MA, nor CA alone could account for conservation differences between EMR and MA-matched non-MR groups. (10 refs.)

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1275 CLINTON, LEROY; & BOYCE, KATH-LEEN. Acquisition of simple motor imitative behavior in mentally retarded and nonretarded children. American Journal of Mental Deficiency, 79(6):695-700, 1975.

Possible differential effects of social reinforcement on MR and non-MR children were examined through 2 simple motor tasks (marble-shaking and block-clapping) embedded within a contingently reinforced imitation task. The 20 non-MR children performed at higher levels when social reinforcement was informative (right-correct) and at lower levels when reinforcement was affective (good-fine). MR children showed the opposite responses. MR Ss also exhibited higher levels of imitative behavior on the tasks under affective social

reinforcement than under informative social reinforcement, while the reverse was true for non-MR Ss. Greater imitation of marble-shaking than block-clapping may be explained by treatment order, compliance, or scoring criteria. (23 refs.)

Department of Special Education University of Illinois at Urbana-Champaign 1005 W. Nevada Street Urbana, Illinois 61801

1276 KAHN, JAMES. Relationship of Piaget's sensorimotor period to language acquisition of profoundly retarded children. American Journal of Mental Deficiency, 79(6):640-643, 1975.

A strong relationship between Stage 6 of Piaget's sensorimotor period and the acquisition of meaningful expressive language was supported by a study of 16 PMR children between 47 and 98 months old. Eight of the children exhibited some meaningful expressive language, and 8 children exhibited none. All of the children exhibiting meaningful expressive language were functioning at Stage 5 in some area of Piaget's sensorimotor period, as tested by the Uzgiris and Hunt instrument (1966). While some of the children exhibiting no meaningful expressive language were functioning at Stage 6, 5 of the 8 Ss functioned below this stage. Stage 6 functioning seems to be a necessary (though not sufficient) prerequisite for learning meaningful expressive language. Training of PMR children who are unable to use expressive language should begin with an assessment of cognitive level. (15 refs.)

Department of Special Education Box 4348 University of Illinois at Chicago Circle Chicago, Illinois 60680 New Mexico State University. Sensory-integration and motor planning activities for handicapped children. Losleben, Jeanne; et al. Las Cruces, New Mexico, 1975.
 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED108450.

Suggestions for motor planning activities for handicapped children are discussed. The suggestions are based on the Las Palomita (New Mexico) Sensory Training Program, and are directed at parents for use in the home. The activities increase sensory-motor integration in cerebral palsied children and other physically and mentally handicapped individuals. Instructions are provided for exercises directed at improving posture, balance and coordination, and walking. Information is also available on constructing or purchasing inexpensive equipment.

1278 KRIGER, SARA FINN. On aging and mental retardation. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975, pp. 20-32.

Data obtained on the life styles of aging MRs indicate the need to take a closer look at this segment of the population and to establish some basic guidelines and models of care to govern their daily needs. Owing to a combination of physical and social factors, a state of dependence exists for MRs which is similar to that which defines the onset of old age in normal persons, but this dependence can be found in MRs at a much earlier age than 65. In general, aging MRs appear to be living under conditions that are satisfactory, at least at face value. All information on the figure responsible for meeting the daily needs of aging MRs in terms of physical care, guidance, support, and general satisfaction of needs points in the direction of the caretaker, and a picture emerges of the residence as the focal point in the lives of these elderly MRs. Recognition of the centrality of the caretaker mandates that investigators pay more attention to the conditions existing within the home, the benefits derived there, and any associated constraints.

1279 Reports from workshops I and II, Tuesday, April 8, 1975. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975, pp. 71-75.

A working consensus concerning primary definitions of MR and aging and related terms was achieved in workshop sessions, and components of the problems encountered by the aged MR were specified. MR, advocate, and consumer of services were defined similarly by all groups. The term "aging" was defined as a developmental concept of a process with potential for habilitation and socialization as well as for deficits in functioning. As such, it was considered preferable to the term "aged," with its emphasis on physical deficits. Some participants voiced reluctance to establish a single definition of the aging MR and stressed the importance of holding individual needs paramount regardless of chronological age. The group was very concerned about closing the doors on any possibilities for serving the needs of any MR adult.

Reports from workshops III and IV, Wednesday, April 9, 1975. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975, pp. 76-108.

The income provisions and/or maintenance resources, social and emotional needs, transportation, vocational and avocational needs, health maintenance, and options for living arrangement of the aging MR population were discussed. The stated goals for the 2-day workshop period were to identify the resources available or necessary in order to solve the problem in each area of need, to identify impediments to solving unmet needs, and to design a strategy of intervention or service delivery to meet the needs in question. Maximization and broadening of resources was considered necessary, with the potential consumer and deliverer of services involved in all planning. The necessary components of a system for fulfilling social and emotional needs were recognized as already existing, but the required integration or continuity mechanisms were lacking. Specific transporation needs were to be maximized within an overall public mass transportation system. The removal of impediments to participation in existing vocational and avocational programs and to delivery of necessary health maintenance services was believed to be a crucial first step towards solution of these problems. The least restrictive, most socially and physically integrated living situation possible for aging MRs was advocated.

1281 BURR, JAMES. From the perspective of the social rehabilitation services. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975, pp. 114-128.

A data base must be developed to demonstrate the extent of the plight of the MR elderly as a social problem, and a constituency must be developed to plead the cause of these individuals politically and as a matter of economic benefit. Planning for the development of supportive services in the near future depends upon knowledge of the various funding sources. Advocates for MRs must be prepared to compete with advocates of other groups to ensure that services for this special population segment will be defined and funded under the Title XX state plan, and linkages between service programs operating under different acts must be implemented at state and local levels. The development of a constituency for elderly MRs, of preventive measures, of educational programs at local, state, and national levels, and of proper strategies and guidelines for action will contribute effectively to the development of a national policy and implementing plan for elderly MRs over the next decade.

Division of Services to the Aged and Handicapped Community Services Administration Social Rehabilitation Services Department of HEW Washington, D.C.

1282 KRASNOFF, MARGARET J. Conference evaluation. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975, pp. 143-147.

Sixty-four participants in the invitational consultant-conference on the problems of elderly MRs were asked to evaluate various aspects of the meetings. Participants represented administrators, direct service workers, and researchers in the field of gerontology and MR. Fifty-two participants (49 consultants and 3 speakers) completed and returned the required feedback form. In general, participants felt that the consultation-conference was helpful in reorganizing ideas and in formulating questions for future research. Eighteen individuals considered the consultation-conference an impetus for broad long-range planning, and 6 others cited the need for interdisciplinary approaches to service delivery. More specific programming information was requested repeatedly, and some participants recommended inviting more state and regional representatives, staff personnel, trainers of students, direct service workers, and consumers to participate in future meetings on gerontological aspects of MR. The overall response to the consultation-conference was a positive one, and each of the evaluations provided insightful comments into the 3-day meetings.

Community Services Division Institute for the Study of Mental Retardation and Related Disabilities University of Michigan Ann Arbor, Michigan

1283 HAMILTON, JANE C.; & SEGAL, RO-BERT M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975. 159 pp.

The proceedings of a conference dealing with the health and medical, emotional and social, housing-residential, and financial needs of the MR aged are presented. MR policy and program issues on the state and local levels are discussed. Strategies of interventions to meet the service needs of the elderly MR are developed on the basis of conference workshops. The Appendices contain the conference program and a list of conference participants, a letter to President Ford concerning the conclusions and recommendations of the conference participants and a response from the White House, and a conference evaluation form. CONTENTS: Introduction; Design and Use of Workbook; Issues Concerning the Delivery of the

Services on the State and Local Levels; Workshop Reports; Issues Concerning the Delivery of Services on a National Level; Conference Evaluation.

1284 RUBIN, ROSALYN A.; et al. The relationship of Apgar scores to neonatal survival and later development: a review. Interim report No. 19. Minneapolis, Minnesota: Department of Psychoeducational Studies, University of Minnesota, 1975. 16 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119864.

The professional literature on the infant Apgar scoring system is reviewed, and its usefulness in indicating postnatal condition and in predicting mental and motor development is discussed. While the 1-minute Apgar score is useful, the 5-minute score is apparently a more sensitive indicator of the newborn infants condition and is a more accurate predictor of later development. The utility of Apgar scores in predicting the course of academic achievement, language development, and school behavior is the subject of further research, including the Educational Follow Up Study.

1285 MALONE, MICHAEL J.; PLATT, MARK M.; & SZOKE, MARIA C. Biochemical correlates of brain development. Clinical Proceedings, Children's Hospital National Medical Center, 31(11):247-255, 1975.

The human central nervous system develops in sequential stages. Four primary periods, each with its own specific morphologic and biochemical parameters, can be distinguished. Period 1, characterized by cell division and cell migration, includes the first 2 trimesters of gestation. Period 2, complete at birth, involves cell growth with development of major neuronal processes and early axodendritic interconnections. Period 3 encompasses the early months of infancy and is characterized by a decrease in linear brain growth and beginning tract myelination. Period 4 is characterized morphologically by active myelination. In the human this latter period is characterized by maximal activity between 6 and 24 months, but myelination continues at a lesser rate through the first 2 decades of life, and continued myelination of subcortical association tract fibers may take place into the third and fourth decades. The timing of infectious, nutritional, and metabolic insults determines the nature subsequent pathology. Since developmental stages are incomplete at birth in the human, early infancy represents a period of unique vulnerability for the genesis of severe and permanent neurologic disorders. (54 refs.)

Department of Neurology Boston City Hospital 818 Harrison Avenue Boston, Massachusetts 02118

1286 GETMAN, GERALD N. Concepts of vision in relation to perception. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 17-32.

Motor training can no longer be considered as if it were movement isolated from all the other perceptual components, and movement can never be considered without including the visual system as an essential part of either the overt or covert activities of the human. The concept of motor training that will prove most effective for children is one of a visuomotor complex wherein the learner is always consciously involved in the process of visually computing and controlling his actions. This participation must occur at the conscious level in the learning process itself and at the subconscious level in the skilled visuomotor performances demanded by the curriculi presented to all children in the currently existing educational system. When mediation programs begin to be designed upon the sound developmental concepts of the interrelationships of all the learning systems of the total organism, the child will become more available to the teacher, and the teacher will be more successful in guiding the child into the mastery of the symbolic world.

1287 CRATTY, BRYANT J. Motor activity and learning diabilities, a look ahead. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 33-49.

There is a dearth of research on motor functioning that must be corrected if children with learning disabilities are to be discussed and provided for with maximum precision. More information is needed about the development of movement abilities in normal and atypical children so that more sophisticated program planning may take place. The influence of medication upon motor abilities requires further exploration, and individual differences in children identified as clumsy are essential for more precise and helpful remediation programs. Relationships between various motor-related therapies and self-control should be studied further via clinical practice and accompanying research efforts. Movement when accompanied by cognitive and perceptual as well as thoughtful reflections upon the psychosocial aspects of games and play may lead to helpful changes in several components of the child's personality. Innumerable research problems which are related to neuromotor function and learning disabilities at the behavioral, biochemical, and/or neurological levels also require further investigation. (32-item bibliog.)

Perceptual-Motor Learning Laboratory University of California Los Angeles, California

1288 WEDELL, KLAUS. Perceptuo-motor disabilities and research. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 51-67.

A great need exists for more research to provide greater detail about expectancies of perceptual and perceptuo-motor functions in relation to behavior-

al adequacy at all stages of early development. Perceptuo-motor skills are important because of their place in the sequence of child development and in the analysis of the tasks children are required to perform. Research is needed to explore the particular contexts in which they are relevant. In the context of the acquisition of basic educational attainments, research is necessary to identify the critical levels of perceptuo-motor skills required to perform these tasks. Here, one of the most important areas of research will be techniques for transfer of skill. In the context of the development of general behavioral adequacy, the need for research lies in a comparison of the effects of general versus task-specific training, coupled with the need for greater specificity of developmental expectations, from which objectives can be derived. (11 refs.)

University of Birmingham Birmingham, England

1289 NOBER, E. HARRIS. Auditory processing and language. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 91-110.

Language development starts immediately after birth as a developmental perceptual process and is basically perceptual in the early years. With age, language interfaces with cognitive processes that are more complex and totally integrated with experience. Except for some temporal deficiencies, there is no demonstrable performance difference in the language processes of young aphasic children and other language delayed children. Whereas the deaf can and do achieve linguistically, albeit at a gruelling and laborious pace, the young aphasic may always be language deficient to some degree, for he has problems that become both a perceptual and conceptual mix. Teachers are the ultimate decision-making improvisors charged with effecting qualitative and quantitative behavioral changes. Theory may provide a systematic frame of reference for classifying teacher observations and for assessing the selective reinforcement contingencies employed in the ongoing language program. Whatever the specific direction of the program, it would have at its base the elements for central auditory processing-analysis, synthesis, storage, and retrieval.

Department of Communication Disorders University of Massachusetts Amherst, Massachusetts

1290 NOBER, LINDA W.; & NOBER, E. HARRIS. Auditory discrimination of learning disabled children in quiet and classroom noise. *Journal of Learning Disabilities*, 8(10):656-659, 1975.

The auditory discrimination performance of 20 normal and 20 learning disabled children 9 to 11 years old was investigated in both quiet and noisy listening conditions. Both forms of the Wepman Auditory Discrimination Test were used. Learning disabled children made significantly more auditory discrimination errors than normals in the relative guiet of small test rooms and when tape recorded classroom noise was introduced in the same test rooms. Under noisy conditions, both groups of children made significantly more auditory discrimination errors than they did in quiet conditions. Noise did not seem to affect the 2 groups differentially; a statistically comparable magnitude of differences was observed. The number of errors for learning disabled children suggests the value of replications in children with psychoneurological diagnoses. Findings could be pertinent to mainstreaming, open classrooms, and other educational issues. (18 refs.)

Center for Audiological Services Clarke School for the Deaf Northhampton, Massachusetts

1291 RASKIN, LARRY M.; & BAKER, GEORGIA PITCHER. Tactual and visual integration in the learning processes: research and implications. *Journal of Learning Disabilities*, 8(2):108-112, 1975.

A review of studies concerned with the integration of touch and vision indicates that vision is the dominant and superior modality for all populations, age groups, and sexes. This suggests that a learning strategy for children with learning disabilities or EMRs should be based on 1) a visual presentation of the material to be learned with

visual recognition; 2) the addition of tactual information in a simultaneous presentation if visual presentations alone result in learning difficulties; and 3) tactual presentations of materials to be learned with tactual recognition. Research is needed to determine whether young learning disabled children function more efficiently through vision, active touch, or a combination of both modalities. Three designs are offered for use in studying the integrative processes of children with academic problems. The choice of research strategy depends on a number of factors, including research aims, the number of children, time available, and the age and nature of the population. (38 refs.)

Child Evaluation Center University of Louisville School of Medicine Louisville, Kentucky 40202

1292 STUBBLEFIELD, JAMES H.; & YOUNG, C. ELLERY. Central auditory dysfunction in learning disabled children. *Journal of Learning Disabilities*, 8(2):32-94, 1975.

The Staggered Spondaic Word Test (SSW Test) was successful in differentiating between 20 learning disabled children aged 7 to 11 and a group of normally achieving children. Reversal type errors were a consistent and significant discriminator, with the learning disabled group scoring well above the top limit of allowable errors for normal performance and the control children scoring well below the standardized norms for adults. It appears reasonable to consider judging the SSW performance of children in this age group by the criterion of standardized limits for normal performance used for adults. If a child scores above the standardized norms for 11 through 60 years, serious consideration should be given to the possibility of a specific learning disability. (19 refs.)

Department of Speech and Theater College of Creative Arts Northern Arizona University Flagstaff, Arizona 86001

1293 IFFY, LESLIE; JAKOBOVITS, ANTAL; WESTLAKE, WILFRED; WINGATE, MARTIN; CATERINI, HERIK; KANOFS-KY, PAUL; & MENDUKE, HYMAN. Early intrauterine development: I. The rate of growth of Caucasian embryos and fetuses between the 6th and 20th weeks of gestation. *Pediatrics*, 56(2):173-186, 1975.

An attempt was made to establish reliable standards of intrauterine growth as expressed in correlations between crown-rump length and menstrual age, using a large number of embryonic and fetal specimens obtained by artificially induced abortion. The study permitted presentation of specific standards of menstrual age, crown-rump length, and body weight correlations for the Caucasian race between 6 and 20 weeks' gestation. Tentative extension of the findings to other parameters, such as crown-heel length, was made possible on the basis of comparison with earlier embryologic studies. Analysis of the data indicated that in the embryonic stages of development, the rate of growth is substantially slower than had been assumed. In the more advanced fetal stages of development, the validity of the long-established standard of Streeter was supported. The study failed to establish a mathematical relationship between embryonic and fetal age and growth rate. (46 refs.)

Department of Obstetrics and Gynecology New Jersey Medical School Martland Hospital 65 Bergen Street Newark, New Jersey 07107

1294 ANDERSON, FRANK M. Occult spinal dysraphism: a series of 73 cases. *Pediatrics*, 55(6):826-835, 1975.

Follow-up studies ranging from 1 to 17 years were conducted to determine the results of treatment of 73 children (49 females and 24 males) with concealed dysraphic lesions. Congenital dermal sinus was the commonest lesion; 26 were encountered, 8 of them accompanied by tumors. Lipomas confluent with the spinal cord were found in 21 patients, 18 had tenseness and well-marked thickening of the filum terminale, 17 had adhesions between roots, filum, or dura mater, and 1 child had an anterior sacral meningocele. At least 12 patients had various combinations of lesions. The most frequent radiologic abnormality was defects in 2 or more of the lower lumbar or upper sacral laminae. Thirty-four of 70 patients having x-ray examinations showed this type of finding, and several more had other changes as well. The most common complaint was impaired urinary control (33 patients). Surgical treatment gave generally satisfactory results. Fourteen of 33 patients with urinary incontinence improved within 3 to 9 months following surgery; a 10-year-old boy showed better control of urine and stool within 1 week. Urinary function was unchanged in 15 patients followed for several years and deteriorated slowly in 4 others. (17 refs.)

1300 North Vermont Avenue Suite 905 Los Angeles, California 90027

1295 CASSADY, GEORGE. Perinatal outcome and referral age. *Pediatrics*, 56(2):160, 1975.

The optimism concerning dramatically improved quality of life for surviving tiny premature infants as a result of prompt correction and intervention in cases of potent insults is dispelled to some degree by a report of neurologic residua in surviving prematures referred for treatment. Certain methodologic and other flaws in the report should caution against total acceptance of the findings. Nevertheless, the frequency of microcephalus and hydrocephalus seen in the survivors studied demands attention and explanation. The "good babies" in previous studies have generally been inborn rather than referred. The fact that the infants in the present report were presumably denied fetal and early neonatal care techniques underlines the need to redirect major efforts towards earlier fetal referral. (1 ref.)

Department of Pediatrics University of Alabama Medical Center University Station Birmingham, Alabama 35294

1296 FITZHARDINGE, P. M. Early growth and development in low-birthweight infants following treatment in an intensive care nursery. *Pediatrics*, 56(2):162-172, 1975.

Baseline data on growth and development through the first year of life were obtained for 67 infants born before 33 weeks' gestation with a birth weight within 2 SD from the mean. The infants were managed in the presently accepted manner regarding ventilation, hydration, and related parameters, but their alimentation consisted only of a 20cal/oz formula (Similac) supplemented by intravenous administration of 10 percent dextrose in water or electrolyte solution. Growth from the expected date of delivery was compared with that of 24 normal full-term infants and with accepted growth standards. Indices for weight and height were compared at term and 1 year postterm. No difference could be detected for height indices for any of the Ss and controls or for weight indices for the male Ss and controls. However, the weight indices for the female Ss were significantly less than for controls. After the term date, no difference could be demonstrated for either sex in the velocity of linear growth between Ss and full-term controls, but the female Ss had a significantly slower rate of growth in weight for the first 6 months. When superimposed on the Stuart and Nellhaus percentile grids, mean weight was at the fiftieth percentile for the boys and between the twenty-fifth and fiftieth percentile for the girls at 1 year postterm. No gross neurological deficits were found for the girls, but they occurred in 22.5 percent of the boys; more than half of the abnormalities were hydrocephaly. (33 refs.)

Hospital for Sick Children 555 University Avenue Toronto, Ontario, Canada

1297 LANSDOWN, RICHARD. Partial sightpartial achievement? Special Education: Forward Trends, 2(2):11-13, 1975.

Thirty partially sighted children aged 6 to 10 from 3 day schools were randomly selected and given a battery of tests to determine the possible relationship between severe sight loss and academic achievement. Partially sighted children were much slower than carefully matched controls at pressing buttons, recognizing shapes and letters, and drawing a line. Visual motor skills varied according to the test. Partially sighted children were not as good as controls on a pencil and paper task (Bender Gestalt), but there was no difference between groups when the test involved more of an understanding of visually presented problems (Progressive Matrices test.) There were no differences between groups in spelling or accuracy or comprehension of reading. Rate of reading was not significantly slower for partially sighted Ss.

Results have mixed implications for special versus integrated education for partially sighted children with no other handicaps. (12 refs.)

Great Ormond Street Hospital for Sick Children London, England

1298 FRIEDLAND, SEYMOUR J.; & MEISELS, SAMUEL J. An application of the Piagetian model to perceptual handicaps. Journal of Learning Disabilities, 8(1):20-24, 1975.

A Piagetian model of the development of spatial understanding in children has implications for the assessment of perceptual handicaps and approaches to remediation. The model hypothesizes that understanding advances from an initially topological conception of space to a conception based on Euclidian properties. Piaget distinguishes between perception of space and representation of space, as well as between direct sensory experience and coordinated action patterns which result in sensory information. In differential diagnosis of perceptual handicaps, children should be assessed in terms of both concepts of space and their ability to function within each system. Approaches to aiding children with perceptual handicaps based on tactile exploration and manipulation of geometric objects may not be helpful unless the child has reached a Euclidian level of representing space. Tangrams and similar approaches could help children build a better foundation in a topological conception of space, (10 refs.)

Wheeler Affiliates Child Development Center 91 Northwest Drive Plainville, Connecticut 06062

1299 GEIGER, WILLIAM L. The Perceptualand Gross-Motor Ability of Mentally Retarded Children. Mount Pleasant, Mich.: Central Michigan University, 1975. 23 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED115062.

Perceptual and gross motor abilities of 30 MR and 25 non-MR 10-12-year-old children were compared. Performance data were gathered on several

motor tasks including the target hop, obstacle course, agility run, and 20-yard dash. A separate set of data were recorded for the MR Ss on the basis of such etiological classifications as Down's Syndrome and cultural-familial type. Results revealed significant differences between the performances of non-MR and MR groups and among the etiologically classified groups.

DEVELOPMENTAL ASPECTS - Mental

1300 SILVER, RAWLEY A. Using art to evaluate and develop cognitive skills: children with communication disorders and children with learning disabilities. Resources in Education (ERIC), 11(5):104, 1976. 27 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED116401.

In order to improve cognitive and language abilities in 45 children with learning difficulties or communication disorders, 2 studies which used art therapy were conducted. The purpose of the art therapy was to develop concepts of sequential order, space, and a class or group of objects. Reference is made to 11 learning disabled children in one study who showed significant improvement in all 3 focal areas of cognitive development during art therapy, and to a 13-year-old boy in the other study who suffered severe hearing loss, language impairments, and an IQ of 43, and who significantly improved after 9 art therapy sessions. The reactions of 14 parents of participants in the second study are summarized, and an overview of that study is included. Teaching suggestions and a sample teacher evaluation form are also provided.

1301 ESTES, ROBERT E.; & STEWART, JANET C. A comparison of visual and auditory channels in learning disabled and control children. Resources in Education (ERIC), 11(5):106, 1976. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED116420.

Visual and auditory channels were compared in 125 fourth grade children, 45 of whom were

learning disabled, 39 borderline learning disabled, and 41 nonlearning disabled. Visual and auditory paired-associate learning tasks were used to test the theory that learning disabled children rely on either a visual or a mixed auditory-visual mode of processing information, and that nonlearning disabled youngsters rely on an auditory mode. Scores on the Illinois Test of Psycholinguistics were correlated with scores from both paired-associate tasks and were analyzed both between and within learning classifications. It was found that the auditory task produced fewer correct responses than did the visual task, and there were no differences among groups on either task.

1302 NELSON, LOUIS R. Neurological aspects of reading disability. *Resources in Education (ERIC)*, 11(5):105, 1976. 4 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED116408.

The neurological aspects of reading disability were discussed at the Annual Meeting of the American Educational Research Association, which was held in Chicago, Illinois, in April, 1974. The nature of reading disabilities was examined, and theories associated with neurology and reading ability were noted. It was suggested that normal constitutional differences cause reading disabilities, and that labeling a child as suffering from "minimal brain dysfunction" is usually inadequate and hinders the remediation process.

1303 GRAF, MERCEDES. A school psychologist's perceptions of learning disabilities in three-year-old children in an early childhood center. Resources in Education (ERIC), 11(5):104, 1976. 20 pp. Available

from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED116406.

A paper presented at the Illinois Council for Exceptional Children, which was held in Chicago, Illinois, in October 1975, reviewed issues involved in screening children for potential learning disabilities at the nursery school level. Learning disabilities were defined and incidence estimates were evaluated. Overviews were presented of the Peabody Picture Vocabulary Test, the Beery Developmental Test of Visual Motor Coordination, and the Caldwell Preschool Inventory, all of which are teacher administered tests. The case study of a 3-year-old child suspected of having a learning disability was reviewed and the child was found to be at high risk because of few opportunities to develop personal social skills. It was suggested that before initiating a screening project, test manuals should be reviewed, assistance from parents in remediation and home management techniques should be enlisted, teachers should be encouraged to expand professionally, and cooperation should be encouraged from others involved with the child, including schools and pediatricians.

1304 SMITH, ELIZABETH I. Personal involvement with learning disability children: activities groups can do for personal involvement with learning disability children thru movement education. Resources in Education (ERIC), 11(5):103, 1976. 14 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC\$1.58, plus postage. Order No. ED116393.

Perceptual motor activities to be used with learning disabled children are discussed. The activities include such skills as kicking, ball bouncing, rope jumping, clock turns, paddle ball, and ball throwing and catching, all of which are intended to improve the coordination, strength, agility, balance, and endurance of the learning disabled child. A rationale for movement education is provided, as well as definitions of 10 terms such as laterality and endurance.

1305 KAPPELMAN, MURRAY M. Learning disabilities: diagnosis and prescription. Resources in Education (ERIC), 11(5):92, 1976. 11 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112554.

The use of an interdisciplinary team approach to diagnosis and prescription for learning disabled (LD) elementary school children resulted in observable educational improvement for 52 percent of the LD children seen in 1 year of a 5-year project and in improved inservice training for regular and resource room teachers. The project was implemented within 11 to 18 elementary schools near the University of Maryland Hospital over a 5-year period. Participating schools received services biweekly from a multidisciplinary team consisting of a social worker, a communications specialist, a psychologist, a diagnostic and prescriptive educator, a physician, a nurse, and the individual teachers and principals. The children's educational needs were monitored, and their progress was reevaluated regularly. Inservice training for teachers covered early identification and development of presecriptive techniques.

1306 BERMAN, ALLAN. Incidence of learning disabilities in juvenile delinquents and nondelinquents: implications for etiology and treatment. Resources in Education (ERIC), 11(5):101, 1976. 7 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112620.

Juvenile delinquents at a Rhode Island training school and nondelinquent controls were given the Halstead-Reitan battery, which includes the Wechsler Intelligence Scale, the Wide Range Achievement Test, and assessments of sensory impairment, in order to determine the incidence of learning disabilities among this population. Data indicate that the 5 neuropsychological indices used (Verbal and Performance IQ, the Trailmaking Test Parts A and B, and Halstead's Impairment Index) correctly classified 87 percent of the delinquents and 78 percent of the controls. Performance IQ and the Impairment Index were the most accurate individual predictors of learning disability. Implications of findings for etiology and treatment are discussed.

1307 WILLIS, BRUCE. Speech of mentally disabled children. Resources in Education (ERIC), 11(5):114-115, 1976. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED116475.

The spontaneous speech of 150 EMR children was grammatically analyzed in order to test the theory that mentally disabled children have "delayed" speech development which resembles the linguistic development of younger normal children. The performance of the EMR children was compared with that of 200 normally developing children using Laura Lee's "Developmental Sentence Analysis" (1974). Significant differences were found between the speech of younger normal children and the speech of younger normal children. A 4 year longitudinal study of a subgroup of the EMR children indicated that there is a developmental plateau beyond which these children do not progress.

1308 WEBSTER, C. D., et al. Assessing autistic children: discrimination training and simultaneous communication procedures. Resources in Education (ERIC), 11(7):102, 1976. 18 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119402.

A 5 week evaluation of 5 severely dysfunctional nonverbal Ss aged 5-9 years in a simultaneous communication program is reported. Analysis of gestural communication revealed that the Ss varied considerably in level of communication skills, that spontaneous communication was less well-developed than receptive and reproductive communication, and that action verbs and nouns were as easy to teach as gestural communications. Another study of 8 MR, 8 autistic, and 8 normal children, which attempted to evaluate Ss' ability to distinguish basic speech elements, is reported. The use of fading procedures, visual and auditory stimulation, and microanalysis of body movement in autism evaluation is also described.

1309 GILLES, DOROTHY CORDES. An exploration of perceptual and cognitive processes involved in piano study and implication for learning disabled children. Resources in Education (ERIC), 11(7):106-107, 1976. 166 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$8.69, plus postage. Order No. ED119435.

The implications for learning disabled children of the perceptual and cognitive processes involved in piano study were explored. Conclusions were based on personal observations during private piano lessions, a literature review, and experience at a summer workshop teaching the learning disabled to play the piano. Functions of the central nervous system during piano playing and the processes and difficulties involved in reading music are considered, and case studies illustrate the implications of these findings for teaching learning disabled children. Similarities between the processing of verbal language used in music and verbal language processing in other subjects indicate that the child should have language integrities in order to learn musical language. Further study is needed in the area of music and learning disability.

1310 Connecticut Health Department. F.R.E.D.D. Free Resources for Educating the Developmentally Disabled. Dewald, Nancy. Hartford, Connecticut: State Department of Health, Office of Mental Retardation, 1975. 35 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED111384.

Project FREDD (Free Resources for Educating the Developmentally Disabled), a bookmobile service providing a special collection of books, media, and games to the mentally handicapped and information on MR to parents, teachers, and the community, was established in Waterbury, Connecticut in 1974 as a cooperative venture of the library and MR agencies in the area. The bookmobile stopped at area associations for the MR, sheltered workshops, and special schools, and borrowed materials could be returned to local libraries. The program was publicized through letters to the community, media and magazine

coverage, and the mobility of the van itself. Valuable experience was gained in identifying popular materials, developing a system for returning materials, scheduling stops, and selecting the type of van to be used. Project FREDD had positive effects on this specialized type of library service.

1311 SIMPKINS, KATHERINE ELIZABETH. Piagetian number concept in normal, retarded, and blind children. Dissertation Abstracts International, 36(6):3573A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,198.

The cognitive theory and assessments of Piaget were utilized in a study of number concept and its relation to arithmetical performance in 25 congenitally blind, 25 normal, and 25 MR children. IQs ranged from 90 to 110 for blind and normal children and from 50 to 75 for MRs; all Ss were aged 6 to 10 years. Scores were obtained for each S on 4 Piagetian assessments of number concept and 2 measures of arithmetic (the Wechsler Intelligence Scale for Children [WISC] and Wide Range Achievement Test [WRAT] arithmetic subtests). Correlational techniques revealed no significant relationship between Piagetian number concept and arithmetic performance, but multiple discriminant analysis identified 2 significant functions which discriminated among the groups on the basis of performance on Piagetian assessments of number concept. Ss performing at a concrete operational level on all Piagetian assessments did significantly better on the WISC and WRAT arithmetic subtests than Ss functioning below the concrete operational level and Ss in transition from a preoperational to a concrete operational level.

Temple University Philadelphia, Pennsylvania

1312 LUSZCZ, MARY A.; & BACHARACH, VERNE R. List organization and rehearsal instructions in recognition memory of retarded adults. American Journal of Mental Deficiency, 80(1):57-72, 1975.

Forty mildly MR adults participated in a study to determine the effects of rehearsal training and categorical list organization on retention, using a procedure that allowed the separate and combined effects of these 2 factors to be assessed independently. Lists of pictures in 4 taxonomic categories compromised retention materials. During acquisition, Ss were shown lists organized according to those classes or lists in which category members were distributed randomly. Cumulative-rehearsal training was given to half of the Ss, but the remaining half were not rehearsed. Ss who were trained to rehearse made fewer errors on the recognition test than the Ss who were not trained to rehearse. Correct responding was not affected by list organization. The critical variable in trying to develop training procedures to improve the retention performance of MRs seems to be the necessity of supplying a type of encoding strategy which is compatible with cognitive functioning of the Ss. (18 refs.)

Department of Psychology University of Alabama University, Alabama 37486

1313 MACMILLIAN, DONALD L. Effect of experimental success and failure on the situational expectancy of EMR and nonretarded children. American Journal of Mental Deficiency, 80(1):90-95, 1975.

Experimentally induced success and failure had a significant effect on both verbal estimates of success and numerical prediction in 3 groups of 16 EMR and non-MR children. EMRs were matched with one sample of non-MR children on the basis of CA, and with another sample of non-MR Ss on the basis of MA. Results were independent of classification, with more failure in Ss expecting to perform more poorly on a subsequent task than was true for Ss performing under success conditions. EMR Ss did not differ significantly from other groups on pretest scores measuring success expectancy. Failure to find hypothesized differences in generalized expectancy among groups could be accounted for by task characteristics or social class of Ss. (14 refs.)

Neuropsychiatric Institute Pacific State Hospital Research Group P.O. Box 100-R Pomona, California 91766 1314 EVANS, ROSS A.; & BILSKY, LINDA HICKSON. Effects of letter reversals training on the discrimination performance of EMR children. American Journal of Mental Deficiency, 80(1):99-108, 1975.

The effectiveness of a letter-discrimination training program specifically designed for mildly MR children was evaluated. Ninety MR elementary school children who had committed letter-reversal errors on a pretest were randomly assigned to 1 of 3 training conditions (1 experimental, 2 control) consisting of 7 sessions given over a 5 week period. Experimental Ss performed significantly better than the no-letter training control Ss on 1 of 4 letter-discrimination posttests. Differences between experimental and the method-specific control groups showed a trend in the expected direction but were not statistically significant. Aptitude X treatment interactions for 3 of the 5 posttests revealed that all significant effects involved the similar-letters training condition. Similar-letters training, when compared to noletter training, tended to facilitate the performance of duller and younger Ss more than brighter and older Ss. (13 refs.)

Department of Psychology University of Wisconsin Madison, Wisconsin 53706

1315 ROSS, SUSAN M.; & ROSS, LEONARD E. Stimulus input recruitment and stimulus trace decay factors in the trace conditioning deficit of severely retarded young adults. American Journal of Mental Deficiency, 80(1):109-113, 1975.

Stimulus trace decay rather than input recruitment may account for poor trace conditioning performance of SMR and PMR Ss. The relative contributions of these factors to the trace conditioning deficit was studied in MR adolescents through trace and delay classical eyelid conditioning procedures. Two conditioned stimulus durations were used: 50msec for a 500-msec interstimulus interval trace group and 500msec for a 950-msec interstimulus interval trace group, For both trace conditioning groups, the "empty" interval between conditioned stimulus was 450msec. After 250 conditioned trials, both trace conditioned groups were significantly below the

delay groups in final level of responding. There was no difference between the 2 trace groups. (5 refs.)

Department of Psychology University of Wisconsin Madison, Wisconsin 53706

1316 HORAI, JOANN; & GUARNACCIA, VINCENT J. Performance and attributions to ability, effort, task, and luck of retarded adults after success or failure feedback. American Journal of Mental Deficiency, 79(6):690-694, 1975.

Forty male EMR Ss participated in a study to determine whether or not the attributional model of success can be used with MR adults and to develop a method to measure attributions to effort, ability, task difficulty, and luck of the MR adult. Feedback did not affect performance, but Ss did make different causal ascriptions to ability, effort, task, and luck as a function of successfailure feedback. MRs attributed failure to lack of effort and bad luck more than they attributed success to effort and good luck. They ascribed success to ability more often than they attributed failure to lack of ability. Interpretations of success and failure were generally consistent with high rather than low achievement motivation. (12 refs.)

Department of Psychology Hofstra University Hempstead, L.I., New York 11550

1317 CONSTANTINE, BETSY; & SIDMAN, MURRAY. Role of naming in delayed matching-to-sample. American Journal of Mental Deficiency, 79(6):680-689, 1975.

The performance of 4 SMR youths on a delayed matching-to-sample task suggested that some MR children may fail to use existing language skills when a new task is being performed. Although Ss matched accurately when a sample picture was available for comparison, they performed poorly on the task when the sample was removed shortly before the comparison stimuli appeared. Three Ss could match pictures to dictated names even under delay conditions which caused complete breakdown of picture-picture matching. These Ss apparently did not apply existing skills (naming

and remembering names) during a delay to the performance of the visual-delayed matching task. A second experiment confirmed that Ss could do delayed picture-picture matching accurately when they were instructed to name the pictures during the matching task. Instruction may bring out the use of existing language skills, although the effects of instructions may not endure. (17 refs.)

Psychology Department, 440 UR Northeastern University Boston, Massachusetts 02115

1318 REICHHART, GREGORY J.; CODY, WILLIAM J.; & BORKOWSKI, JOHN G. Training and transfer of clustering and cumulative rehearsal strategies in retarded individuals. American Journal of Mental Deficiency, 79(6):648-658, 1975.

To assess the durability of research strategies on serial learning of 9-item lists, clustering and/or cumulative-rehearsal instructions were provided to MR adolescents at several intelligence quotient (IQ) levels. Immediate, short-term, and long-term transfer of the strategy was examined by presenting a new list on each day. The 2 highest IQ (mean IQ = 55) groups (1 organically impaired and the other cultural-familially MR) successfully transferred their strategies over 3 sessions. No transfer occurred in groups with mean IQ of 40. Among higher IQ Ss, greater consistency in the expected pattern of exposure durations was found in the cumulative-rehearsal group than in the cumulative-clustering group. Best recall during immediate transfer was found for the cumulative group; on short-term transfer, both the cumulative and cumulative-clustering groups learned more rapidly than clustering or control groups. For MRs with IQs over 50, the most efficient technique for inducing strategy transfer to a categorized serial list was the cumulative-rehearsal strategy. (20 refs.)

Department of Psychology University of Notre Dame Notre Dame, Indiana 46556

1319 TURNURE, JAMES E.; & *THURLOW, MARTHA L. Effects of structural variations in elaboration on learning by EMR and nonretarded children. American Journal of Mental Deficiency, 79(6):632-639, 1975.

The ability of EMR and non-EMR children (8 to 10 years old) to understand elaborations in various structures and to use them efficiently in learning tasks was studied by comparing the effects of compound sentences, complex sentences, and paragraphs on paired-associate learning and reversal. No differences in the effects of the 3 elaboration structures were revealed by analyses of trials-to-criterion, first trial errors, and reversal errors. Given constant meaning and relational factors, some forms of surface structure differences were not significant in determining the child's ability to understand an elaboration or to use it in a learning situation. There were no differences between groups in the analysis of first trial errors; small significant differences between non-MR and EMR children were observed in data relating to trials-to-criterion and reversal performance. For both MR and non-MR Ss, it is crucial that elaborative contexts contain reasonable or meaningful relations between items which are to be paired. (45 refs.)

*Department of Psychoeducational Studies Research and Development Center 14 Pattee Hall University of Minnesota Minneapolis, Minnesota 55455

1320 GALLAGHER, JAMES J. The Application of Child Development Research to Exceptional Children. Restcn, Virginia: Council for Exceptional Children, 1975. 394 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091. Price \$12.00.

A review of 14 papers on child development research and the application of this research to exceptional children is presented. Areas of child development research covered include language acquisition, perception, concept formation, learning, family relationships, identification and sex role, and children's response to intervention programs. Discussions of the application of child development research to exceptional children focus on children with intellectual superiority, MR children, children with learning disabilities, children with social and emotional problems, children with visual handicaps, children with hearing impairments, and children with communicative disorders.

1321 STEELE, JOE M. Longitudinal and comparative look at cognitive development in EMH children. Resources in Education (ERIC), 11(5):94, 1976. 23 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112571.

The cognitive development of 202 13-16-year-old EMR students was studied longitudinally to determine their rates of cognitive development and to compare developmental and grade levels. Ss were administered a written test which contained 8 problem-solving and 12 cognitive development items. The items represented Piagetian definitions of the concrete I, concrete II, and formal I operations stages of cognitive development. Sixty-eight percent of the EMRs demonstrated no change in developmental level over the 12-month study period. Of those who did gain in developmental level, 92 percent gained 1 level, and 6 percent lost a level. Findings suggest that students' cognitive developmental levels should be considered in the design of curriculum materials, and that more educationally relevant information is contained in scores on measures of developmental level than in IQ scores.

1322 GLIDDEN, LARAINE MASTERS. Blocking and instructions to organize in the free recall and subjective organization of EMR adolescents. Resources in Education (ERIC), 11(5):94-95, 1976. 26 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76, plus postage. Order No. ED112573.

The effects of blocking and instructions to organize in the free-recall and subjective organization of 83 EMR adolescents were investigated. A multitrial, free recall experiment was conducted, in which the number of stimulus items presented together (1, 3, or 5) was varied, and Ss were either instructed or not instructed to organize. Presentation of 3 stimulus items together produced the highest subjective organization when Ss were asked to remember 15 common words. The overall number of correct answers was not affected by the blocking of items, but blocking did extend the recency effect in the serial position curve. There

was no effect on either number of correct responses or subjective organization when instructions to organize were given.

Box 89 Teachers College Columbia University New York, New York 10027

1323 KOSINSKI, SHAE. A model for learning disabilities as a prerequisite to the evaluation of a prescriptive instructional system. Resources in Education (ERIC), 11(5):95, 1976. 42 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112577.

To study the effects of definitions of learning disabilities and identification procedures, data were obtained on the characteristics of 53 learning disabled children in grades 1-7. Responses to the Illinois Test of Psycholinguistic Abilities and to the Wechsler Intelligence Scale for Children were grouped in hierarchies and subjected to discriminant analysis. Data indicate that such children may be clearly divided into the following groups, based on the factors of intelligence and perceptual skills: 1) low intelligence and severe visual perceptual problems; 2) average intelligence and severe visual perceptual problems; 3) average intelligence and low visual perceptual problems; and 4) high intelligence and moderate visual perceptual problems. A reassessment of identification procedures and development of a prescriptive process based on the above groupings may be necessary.

1324 LATHEY, JONATHAN. Gagne's learning types and levels of retardation. *Mental Retardation*, 13(3):26-27, 1975.

Gagne's hierarchy of learning might be used to describe more adequately the nature of learning that can occur at various levels of MR and to devise effective training and instruction methods more efficiently. The Gagne model includes: 1) signal learning, or classical conditioning; 2) stimulus-response learning, or operant conditioning; 3) motor chaining; 4) learning of verbal associations; 5) multiple discrimination learning; and 6) concept learning. These learning types can be used to characterize the type of learning

possible at each of the 4 levels of MR defined by Grossman (1973). Relating learning types to levels of MR may lead to the generation of effective learning prescriptions. (19 refs.)

Wassaic Developmental Center Wassaic, New York

1325 THRONE, JOHN M. The replicability fetish and the Milwau kee Project. *Mental Retardation*, 13(4):14-17, 1975.

Criticisms of the Milwaukee Project (an investigation into the effectiveness of intervention with culturally disadvantaged infants beginning at age 6 months) have cited clinical and educational deficiencies related to the investigative design (Page, 1972) although the real issues regarding the study pertain to its logical and scientific merit. The project was in fact very successful, as, when tested at 51/2 years, the experimental Ss recorded an average IQ of 118, while the control Ss only attained an IQ of 92. However, the open-ended project did not allow for reciprocal effects on experimental infants of their social surroundings, affected by improved responses after intervention. Interpreting results of studies like the Milwaukee Project solely as functions of the independent variables of intervention may result in fallacious conclusions. Unlike the experimental-control group design employed, a multiple baseline design would permit investigators to focus on inducing the effectiveness of treatment instead of deducing it theoretically through the use of inferential statistical analysis. (12 refs.)

Lakemary Center for Exceptional Children Paola, Kansas

1326 BANNATYNE, ALEXANDER. The spatially competent child with learning disabilities (SCLD): the evidence from research. Miami, Florida: Bannatyne Children's Learning Center, 1975. 47 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED111133.

A review of the literature supports the hypothesis that the majority (60-80 percent) of learning disabled children are not brain-damaged, but have

above average spatial ability and major genetically-determined deficits in auditory-vocal memory processing. The lack of visual problems in the spatially competent learning disabled (SCLD) child has been documented, along with the frequent occurrence of a general maturational lag in SCLD males. Data from studies on birth order, sex of siblings, neurological impairment, and pregnancy and perinatal factors support the hypothesis. Hyperactivity is also due to an inherited maturational lag, and findings from research on hyperactivity and brain damage, the nature of hyperactivity, and the management of hyperactivity are in agreement with this theory. Research on the inheritance of specific abilities and disabilities, specific abilities underlying reading and other language processes, the good spatial ability but poor auditory-vocal memory skills in SCLD children, the incidence of SCLD children, and the effectiveness of remediation programs is also considered.

1327 KELLER, JOHN M. Determinants of learned helplessness in problem solving. Resouces in Education (ERIC), 10(7):92, 1975. 51 pp. Available from ERIC Document Reproduction Service, Box 190, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No. ED102937.

Determinants of learned helplessness in problem solving were investigated in a study of 54 subjects who completed a training task in which a manipulandum was to be used to escape from a mild to aversive audible tone. The greatest decrement in performance during the transfer test was demonstrated by the subjects who were unable to escape during the acquisition trials. Findings indicate that the development of learned helplessness is influenced by both instructions and reinforcement contingencies in the laboratory setting. This phenomenon may facilitate a greater understanding of the causes and treatment of chronic failure behavior which is exhibited independently of ability in school children, even when they may be motivated by contingent reinforcement to succeed.

1328 LOWENTHAL, BARBARA. Piaget's preoperational stage of development and applications for special preschoolers. Resources in Education (ERIC), 11(5):109, 1976. 9 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED116438.

Piaget's concept of the preoperational stage of cognitive development may have implications for special preschoolers. Many preschool children with developmental delays in cognition and language are in this stage, which may be divided into the preconceptual and intuitive phases. In the former phase, the child cannot form true concepts and often reasons in the form of unrelated judgment without logical organization. In the latter phase, the preschooler's reasoning is related to his perceptions, which may distort his thinking patterns. In a special preschool class, children should be exposed to a wide variety of activities. including sensory exploration (for example, imitation of people, animals, or objects). Parents should emphasize real experiences, and parents and teachers should use language related to what the child is experiencing and to his general level of language functioning.

1329 University of Missouri-Kansas City. "Dyslexia": toward semantical clarification. Manzo, Anthony V.; & Duffelmeyer, Fred. Kansas City, Missouri: Division of Reading Education, 1975. 10 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119140.

An attempt to clarify the meaning of the term dyslexia begins by defining it as a generic description for severe and puzzling reading disability, whether resistant to treatment (chronic) or involving reading deficits of 25 percent or more below MA (acute). Dyslexia can be considered specific when there are no complications, while compound dyslexia denotes primary (related to the origins of the problem) or secondary (resulting from the condition) complications. Useful etiologic descriptions for dyslexia include congenital (indicating genetic origin), psychoneurotic (emotional or stress-related origin), and constitutional (originating from brain damage, chemical imbalance, or trauma). Reading disabilities may be described in the following hierarchical sequence: suboptimal, disabled, severely disabled, dyslexic, and alexic.

1330 Wisconsin University. Statistical inference in the great IQ debate. Goldberger, Arthur S. Madison, Wisc.: Inst. for Research on Poverty, 1975. 25 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED117154.

Statistical inference in the great IQ debate is discussed, including an examination of the estimation of genetic models reported by J. L. Jinks and L. J. Eaves in a recent review. Errors in procedure and interpretation which were found in Jinks and Eaves' study are identified. A study of kinship correlations, which theorized that intelligence is highly heritable, is overviewed, and it is concluded that the evidence for that proposition is not persuasive.

1331 SAFER, NANCY DIETZ. The relationship of language, short-term memory, outer-directedness, intelligence, and hypothesis testing to the concept attainment skills of mentally retarded children. *Dissertation Abstracts International*, 36(6):3571A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,138.

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Fifty MRs (IQ 40 to 69) equated for MA (7 years) but differing in concept attainment ability were compared using a multivariate design. Variables were language, short-term memory, outerdirectedness, intelligence, and hypothesis testing. Ss were assigned to high, middle, and low concept attainment groups on the basis of their concept attainment scores. Discriminant analysis procedures were employed to determine whether some combination of scores on the 5 variables existed which significantly discriminated among the 3 groups. The results showed that high, middle, and low concept attainment groups of MRs could be significantly differentiated by a single discriminant function. Hypothesis testing and memory were weighted most heavily in determining this function and, thus, contributed most to the discrimination among groups. The results also showed that MRs in the high and middle ability groups were able to engage in hypothesis testing behavior, although their ability to use a focusing strategy appeared limited by problems in retaining previous outcome information.

1332 SCHLAGHECK, JAMES FRANCIS. The effects of cues on the paired-associate learning efficiency of educable mental retardates in special classes. *Dissertation Abstracts International*, 36(6):3571A-3572A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-18,195.

The effect of multiple cues with paired-associate (PA) tasks on the receptive learning efficiency of 48 EMR children (CA 7 to 11 years) in elementary EMR classes in public schools was investigated. Among the 48 EMR children, a high group (IQ 70 to 84) of 24 children was compared for equivalence of learning with a low group (IQ 53 to 69) of 24 children. In the study with cues and PA tasks in the area of verbal learning, 6 Ss from each IQ group were assigned randomly to 2 treatments with cues and 2 treatments without cues. In the 2 treatments with cues, MRs were pretrained with multiple cues in relating the stimulus and response elements with each PA task. MRs without cues in 2 treatments were not provided with such visual and auditory cues in pretraining, but were expected to learn the PA tasks in the instructional phase by verbalizing the names of the items in each pair in a word mediation condition. The same 8 PA tasks were utilized for all 4 treatments. The major finding of the study was that EMRs taught to utilize some aspects of cues are superior in receptive learning efficiency with PA tasks as compared to counterparts not taught to utilize cues. EMRs of higher intelligence were also found to be superior in such receptive learning efficiency to a comparable group of lower intelligence.

University of Wisconsin Madison, Wisconsin

1333 RICHEY, DAVID DEAN. Classroom behavioral styles of learning disabled and non-learning disabled children: implications for the stereotype and for remediation. *Dissertation Abstracts International*, 36(6):3569A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-29,065.

Data on the actual classroom behavior of learning disabled children as opposed to behaviors assumed as part of the label, or behaviors ascribed through teacher rating methods, were collected in 5 third or fourth grade classrooms in each of 2 elementary

schools. Each of 15 matched learning disablednonlearning disabled pairs was observed for a total of 30 minutes over a 3-day period. The only classroom behavior which differentiated learning disabled children from non-learning disabled children was distractibility. There was very limited support for the stereotyped cluster of negative behaviors associated with learning disabilities. Ss displayed differing proportions of self-directed activity, passive responding, gross motor activity, and social interaction as a function of school, grade level, or the interaction of the 2 factors. The findings suggested that particular types of classroom organization and teacher approaches may serve to foster or minimize specific behaviors related to achievement.

University of North Carolina Chapel Hill, North Carolina

1334 HRESKO, WAYNE PAUL. The elicited imitation of varying sentence constructions by learning disabled and normal children. Dissertation Abstracts International, 36(6):3564A-3565A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,176.

Eighty 5-year-olds and 6-year-olds with impaired and normal auditory discrimination were tested on an elicited information task consisting of 36 sentences representing 6 categories of sentence constructions (question construction [QC], expanded declarative [ED], unusual expanded declarative [UED], preposed movable phrase [PMP], preposed movable clause [PMC], and relative clause [RC]). Responses were scored to indicate nonrepetition responses, ungrammatical nonrepetition responses, semantically altered nonrepetition responses, reformulations, and function word omissions. As predicted, the learning disabled group had significantly more errors than the normal group for all analyses. Except for the analysis involving semantically altered nonrepetition responses, the rank order of the sentence construction means was, from easiest to hardest, QC, PMP, ED, PMC, UED, and RC (with UED and RC reversed in position for the ungrammatical nonrepetition responses). For reformulations, reductions appeared to be more prevalent for learning disabled than for normal children. Both groups appeared to omit more articles and high frequency prepositions than other function word types. The results indicated the feasibility of

employing psycholinguistic techniques for the examination of language in learning disabled children.

Temple University Philadelphia, Pennsylvania

1335 FREW, THOMAS WESLEY. The utilization of odor preferences as reinforcers for academic tasks with young learning disabled children. Dissertation Abstracts International, 36(6):3564A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-26,577.

The reinforcing effects of odor on the academic behavior of 6 Ss with learning problems were studied. An odor preference test consisting of 4 odors and 1 non-odor (water) presented in liquid form was presented to each S. Data were gathered for this procedure using event recording. A multiple baseline design was employed for analysis of behavior. Individual tasks were presented in the area of mathematics, and individually preferred odors were presented upon successful task completion. The results demonstrated that each S preferred an odor over a non-odor and that, with the introduction of the odor reinforcers, the numbers of correct responses increased to mastery of task for 5 of 6 Ss. A clear functional relationship was shown between odor reinforcement and mathematical concepts.

Ohio State University Columbus, Ohio

1336 FRANKE, ROSEANNE M. The correlation of standardized test results and observable behavior of learning disabled students. Dissertation Abstracts International, 36(6):3563A-3564A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-26,253.

To test the hypothesis that teachers of learning disabled students can observe and rate specific behaviors of these students which will correlate significantly with specific tasks as measured on standardized test instruments, 40 students (CA 5 years 6 mos to 9 years 6 mos) in a learning disabilities program were rated on behavior by their teachers for 6 weeks. With the learning

disabled population, a strong relationship appeared between memory factors, and the ability to perform on memory items had a distinct relationship to measures of general knowledge, verbal expression, and comprehension. While some observable behaviors correlated significantly with expected test scores, others dealing primarily with graphic language did not. The study indicated that teachers can effectively provide information about learning styles of learning disabled students by means of a behavior rating, but that many of the behaviors seen in an academic setting cannot be defined in terms of specific tasks.

St. Louis University St. Louis, Missouri

1337 REID, DOROTHY KIM. The effects of cognitive tempo and the presence of a memory aid on conjunctive concept attainment in educable mentally retarded boys. Dissertation Abstracts International, 36(6):3525A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,194.

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Thirty impulsive and 30 reflective black EMR inner-city boys (CA 9 to 12 years) were compared for the effects of cognitive tempo, presence or absence of a memory aid, and concept-attainment problems on their performance on 3 conjunctive concept-attainment tasks. Repeated measures analyses of variance were used to examine the influence of these independent variables on the number of trials to solution for behavioral attainment of the concepts; number of trials required before the S correctly verbalized the solution minus the number of trials required for behavioral attainment; the percentage of trials in behavioral attainment on which perceptual-inference, presence of a memory aid, and absence of a memory aid errors were made; and the percentage of trials in behavioral attainment on which consecutive, incorrect choices were located in the same position on the test cards. Impulsive Ss required significantly more trials to solution in behavioral attainment than did reflective Ss; differences among all concept problems were significant for impulsive Ss, but their performance was unaffected by the presence or absence of the memory aid. Reflective Ss required significantly fewer trials when the memory aid was present. Cognitive tempo proved to be a stable and powerful variable affecting performance on behavioral attainment, verbalization, and strategies used by the EMR boys on concept-attainment tasks.

Temple University Philadelphia, Pennsylvania

1338 SHOCKLEY, PATRICIA HAWN. Early detection of learning handicaps with rural kindergarten children. Dissertation Abstracts International, 36(6):3527A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-26,734.

The Knoxville (Tennessee) Initial Detection Screening (KIDS) inventory, designed to sample the developmental level of 5-year-olds in the area of gross motor skills, sensory motor skills, perceptual motor skills, speech and language, conceptual skills, and social skills, was administered to 230 entering kindergarten pupils in a rural Appalachian county, and additional screening procedures using a multifaceted and multidisciplinary approach involving the teacher, the parent, and demographic and social data were evaluated. Different adaptations of a questionnaire designed to rate behaviorally some of the same developmental areas sampled by the KIDS were administered to teachers and parents, and the school social worker was asked to rate each child on the basis of certain available demographic data and personal knowledge of the home and family. Results of the screening procedures were analyzed statistically in order to correlate their validity with a risk rating based upon individual educational assessment by the school psychologist with a random sample of 60 children. The KIDS, teacher questionnaire, parent questionnaire, and demographic rating were ranked in that order as predictors of the examiner's rating. The effect of the demographic rating was negligible.

University of Tennessee Knoxville, Tennessee

1339 WILLHELM, SIDNEY M. The race and racism of the I.Q. argument. Resources in Education (ERIC), 11(7):235, 1976. 16 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED120332.

The argument that advances genetic reasons why black performance on I.Q. tests is inferior to the performance of whites performs the same racist function as Christianity and Darwinism, in that it offers a socially acceptable justification for racism. As such, it imposes upon blacks social and vocational criteria that ensure failure and frustration. The currency of such IQ theories coincides with the development of technologies so advanced that human thought and labor have been further devalued. This development reinforces economic and social decisions based on the theories of inferior black intelligence, because in such a state of advanced technology, those workers and leaders with the lowest IQ are the most readily expendable. The policy implications of these developments, including genocide, are discussed.

1340 Dyslexia. *British Medical Journal*, 4(5999):724-725, 1975. (Editorial)

Epidemiological research has revealed the existence of 2 main types of reading disorder, general reading backwardness and specific reading retardation. The former, usually seen in children from large families and lower social classes, affects both boys and girls and is often associated with other learning problems and with abnormal neurological findings. Specific reading retardation, on the other hand, is 3 times as common in boys as in girls and is rarely associated with neurological abnormality. These children have some but not all of the features listed in the classical definition of specific dyslexia. The educational and remedial implications of the 2 types of disorders are uncertain but are likely to be important. The secondary emotional problems and probably the remedial therapy should be different for the 2 groups. Assessment of any child reading 2 years or more behind his chronological age should be made early to allow for prompt identification and classification of the problem. (2 refs.)

1341 SHURE, MYRNA B.; & SPIVACK, GEORGE. A preventive mental health program for young "inner city" children: the second (kindergarten) year. Resources in Education (ERIC), 11(7):159, 1976. 18 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119819.

Since children with strong interpersonal cognitive problem-solving (ICPS) skills demonstrate good personal adjustment in terms of the reflectivity/ impulsivity behavioral dimension, a group of 69 beginning kindergarten children who had been trained in ICPS was compared with a group of 62 kindergarten children who had not in order to evaluate the effectiveness of ICPS in helping children develop thinking habits for problemsolving. The first group was divided into a retraining group (39 Ss) and a control group (30 Ss), while the second group was divided into a training group (35 Ss) and an untrained group (27 Ss). After nursery school and kindergarten, each group was administered the Preschool Interpersonal Problem Solving Test (PIPS). Those Ss who had been trained in nursery school but not in kindergarten were able to conceptualize significantly more interpersonal problem solutions than those Ss who were trained after nursery school; this previously trained group also showed high skill retention after 1 year. In terms of behavioral adjustment, 1 year of training was as effective as 2, and results suggested that nursery training is optimal.

1342 IVANANS, TERESA. Effect of maternal education and ethnic background on infant development. Archives of Disease in Childhood, 50(6):454-457, 1975.

The effects of interaction of ethnic group and parents' socioeconomic class (as measured by mothers' level of education) on the developmental quotient (DQ) of 173 infants under the age of 1 were studied in a setting where geographic neighborhood and child health services were equal (the Kiryat Yovel area of Jerusalem). As measured by the Brunet-Lezine adaptation of Gesell's developmental schedule, the mean DQs of infants of highly educated mothers were higher in all 5 areas of development than those of infants whose mothers had less education. When education groups were comparable, North African babies had better development than all other groups (babies of Asian, European, or Israeli origin), while European babies showed the least development. (12 refs.)

Department of Paediatrics Hadassah Medical Centre Hebrew University Jerusalem, Israel 1343 WILSON, JOHN A. R. How motivation is learned: a neurological explanation. Preconvention institute 7; brain functions in reading and reading disability. Resources in Education (ERIC), 11(7):63, 1976. 13 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119105.

A neurological explanation of brain function in reading and reading disability asserts that the failure to develop the motivation to read is the critical component in reading disability. This failure of motivation is discussed in terms of a model of goal seeking behavior based on hypothalamic neurotransmitter function. Reading motivation is also dependent on expectancies built into the sensory integration process. The roles of reinforcement and habituation in reading behavior and Sommerhoff's theory of a lambda configuration as the basis for learning are also discussed. Successful teaching of reading depends both on making it a challenging task and on careful development and encouragement of the motivation process.

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Directions in Learning Disabilities, 2(1-3),
 1975; 3(1-5), 1975-1976. Omaha, Nebras ka: Hearing Disabilities Center, 1975-76.

A new publication produced 6 times yearly by the Nebraska State Center for Learning Disabilities deals with the diagnostic, remedial, and training services offered by the Center and with specific issues related to the broad field that learning disabilities encompasses. Topics range from behavior management, in-service training for teachers, views on hyperactivity, and language development in the classroom to teacher selection, a description of the resource teacher, teaching alternatives, and the role of the special educator with special children. Each issue also includes pertinent and recent research data and publications available in the area, testing devices, remedial materials, and announcements of professional meetings, seminars, and workshops to be held concerning learning disabilities.

Meyer Children's Rehabilitation Institute 444 South 44th Street Omaha, Nebraska 68131 1345 Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, 202 pp. (Price unknown)

Ten of the papers delivered during a conference on learning disabilities (Ann Arbor, Michigan, November 20-22, 1974) are included in a volume covering issues ranging from classroom programming theory to the implications of neurological research. The need for a more positive approach in defining what learning disabled children are rather than what they are not is emphasized.

CONTENTS: Introduction and Overview of the Problem of the Conference (Cruickshank); Concepts of Vision in Relation to Perception (Getman); Motor Acitivities and Learning Disabilities, A Look Ahead (Cratty); Perceptuo-Motor Disabilities and Research (Wedell); Futures in Perceptual Training (Frostig); Auditory Processing and Language (Nober); Perception and Educational Planning (Johnson); Medication and Control of Behavior (Kornetsky); Environmentally Determined Learning Disabilities (Deutsch); Neuroradiology and Learning Disabilities (Valk).

1346 CRUICKSHANK, WILLIAM M. Introduction and overview of the problem of the conference. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 1-16.

The development of a new area of psychoeducational endeavor has resulted in some better services to children, but serious problems have been created which remain to be corrected. The field of learning disabilities is confused and misunderstood by a great many people who are actually functioning within it, and it urgently needs defining. On the basis of psychology, special education, speech pathology, audiology, and some of the other disciplines intricately related to learning disability, an educational blueprint must be developed which the educator can complement with appropriate teaching materials. Corroboration of data accu-

mulated thus far is basic. Then, the issues of prevention, the use of medication to control the behavior of elementary and secondary school children, and the development of more accurate diagnostic techniques in both neurology and psychology must be addressed. Finally, the issue of the interdisciplinary attack on learning disabled children must be submitted to study.

ISMRRD 130 South First Street Ann Arbor, Michigan 48108

1347 FROSTIG, MARIANNE. Futures in perceptual training. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 69-89.

Current, contradictory trends in visual perceptual training will have to be reevaluated and reoriented if perceptual training is to ameliorate the problems caused by perceptual disturbances and to assist in the optimum development of the child. In many areas of the country, public school education includes perceptual training at least in the special curriculum, and classes and remedial tutoring groups for children with perceptual handicaps are becoming increasingly available. The trend in present research is to focus on what is called the "scientific." As a result, what is not measurable tends to be neglected, even when issues of central importance for the human condition are at stake. Six lines of current research-physiological research, research in cultural differences, learning disabilities, perceptual and perceptually based processes, interactions between personal characteristics and learning, and psychometric research-all have bearing on the future of perceptual research and perceptual training. (35-item bibliog.)

Frostig Center for Educational Therapy Los Angeles, California

1348 JOHNSON, DORIS J. Perception and educational planning. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Dec-

ade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret S., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 111-121.

Balance and interaction are required among the many professionals who are attempting to meet the needs of the learning disabled child. Balance is needed in instruction between work on the child's ability and his disability, between work on skills and subject matter, and between testing and teaching. As learning disabled children progress through school, a balance should be attempted between academic, social-personal, and vocational training. It is critical to maintain a balance between special and regular education. Interaction is essential as it relates to the child's action upon the objects and events in his world and to the intraorganismic pattern of strengths and weaknessess in the child. Interrelationships between verbal and nonverbal learning should be investigated. Interaction should also be considered as analyses are made of the child's performance in various environments with various people. In general, a balance between theory and practice is needed, and collaborative programs of research, assessment, and remediation should be supported. Such efforts should yield a more integrated approach to the learning disabled child and should foster growth among the professionals as well. (4-item bibliog.)

Program in Learning Disabilities Northwestern University Chicago, Illinois

1349 KORNETSKY, CONAN. Medication and control of behavior. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 123-147.

While drugs are useful for some children with certain types of learning disabilities, they are not a panacea and can never substitute for good teaching practices. One of the major concerns of the drug treatment of the child with minimal brain dysfunction (MBD) is the possible effects of long-term

therapy. One published paper strongly suggests a negative effect from long-term use of central stimulants in the treatment of the hyperkinetic child. Unfortunately, a widespread tendency exists to treat every child who is difficult to manage in school with drugs. For those children who clearly fit the definition of the MBD child, medication may prove helpful, but failure to diagnose and treat an MBD child adequately would be just as harmful as treating the difficult child with drugs rather than good teaching.

Boston University Medical School Boston, Massachusetts

determined learning disabilities. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 149-165.

Environmentally caused learning disabilities include not only those which are typically categorized as biological but those with more subtle aspects as well. Among the learning disabilities which might be termed emotionally reactive, the most frequent are those found in the child who had early difficulty in school and who, consequently, came to regard himself as a poor or deficient learner. There are also reactive learning disabilities of the physically ill or handicapped child and of the abused child. Modes of fostering or decreasing motivation to learn, the types of learning and achievement which are motivated by differing family value systems, and the degree to which family-child interaction (and particularly parent-child interaction) enhances or impedes learning are some of the potential subtle environmental sources of disability found in child-rearing practices. Optimally, learning environments will be created which are responsive to the actual needs and levels of the children who come to them, rather than to previously determined notions of what children should be exposed to at particular ages and stages. (14 refs.)

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Institute for Developmental Studies New York University New York, New York 1351 VALK, JAAP. Neuroradiology and learning disabilities. In: Institute for the Study of MR and Related Disabilities (ISMRRD). Learning Disabilities: the Decade Ahead. Proceedings of a Conference held in Ann Arbor, Michigan, November 20-22, 1974. Krasnoff, Margaret J., ed. Ann Arbor, Michigan: Community Services Division, ISMRRD, 1975, pp. 167-193.

Brain damage plays an important role in some cases with learning disabilities, and neuroradiological findings could lead to a new educational strategy for some of these children. Neuroradiological research has contributed in individual cases to the demonstration of damage of the inhibitory system (minimal brain damage syndrome), of cerebellar dysfunction, and, unexpectedly, of treatable neurosurgical conditions. Further rubrication of the demonstrated abnormalities in a large number of cases allowing statistical analysis is the task of the coming years. At the same time, follow-up of typical cases will perhaps lead to a better understanding of the causes of events in the life of children with a circumscribed cerebral or cerebellar deficit.

Department of Neuroradiology Valeriusclinic, Free University Amsterdam, The Netherlands

1352 SCRANTON, THOMAS R.; & DOWNS, MARY LOU. Elementary and secondary learning disabilities programs in the U.S.: a survey. Journal of Learning Disabilities, 8(6):394-399, 1975.

The present status of learning disability programs in both elementary and secondary school levels was investigated through a 50-state survey. Data, which are limited by the types of statistical information collected by each state, indicate great variance among states for both percentage and absolute number of programs in operations. There was also a marked difference between the level of development for elementary and scondary level programs during the 1973-1974 school year. Several of the states with the best development in both the elementary and secondary areas (California, Connecticut, and Utah) should provide guidance to states which are poorly developed at the secondary level. If a learning disorder is to be considered as a handicapping condition, these data suggest that school district programs must grow at an approximate rate of 12 percent a year at the elementary level to achieve programs for 85 percent of the children. The growth rate at the secondary level must be about 22 percent annually to achieve this goal. (14 refs.)

101 Miller Hall (DQ-12) University of Washington Seattle, Washington

1353 BUSSELL, CAROL; HULS, BETH; & LONG, LINDA. Positive reinforcers for modification of auditory processing skills in LD and EMR children. Journal of Learning Disabilities, 8(6):373-376, 1975.

An investigation of 18 learning disabled (LD) or EMR children with specific auditory deficits indicated the importance of motivation in the modification of auditory behaviors. Ss were randomly divided into 3 groups and exposed to tapes. The group which was administered token reinforcement combined with teacher enrichment increased their listening skills significantly (as measured by pretests and posttests on the Science Research Associates (SRA) Listening Skills Tapes - Level IIA). Ss who had only token reinforcement exhibited moderate increases in development of auditory skills, while little or no increases were seen in Ss given neither form of reinforcement. Behaviors of children during listening tasks suggested that the SRA tapes used may be too difficult for some learning disabled and EMR Ss. The chronological age of Ss was comparable to the grade level designated on the materials. (10 refs.)

Eisenhower Elementary School 2926 Lone Pine Road Lake Park, Florida 33403

1354 FORNESS, STEVEN R.; & ESVELDT, KAREN C. Classroom observation of children with learning and behavior problems.

Journal of Learning Disabilities, 8(6):382-385, 1975.

Systematic classroom observation may be a useful technique for screening students with learning or behavior problems. When 24 boys under evaluation for learning or behavior problems were observed by 6 graduate students in education in their primary classrooms over a 6-day period,

significant differences between target Ss and male peers in the same reading group related to on-task behavior and frequency of teacher response to their behavior. Relatively low attention levels of arget children were reflected in extra attention provided by the teacher. Since teacher response for the first 3 days and the last 3 days did not differ significantly, responses of teachers did not seem to be an artifact of observer presence. Differences between groups in percent of total positive behavior were significant in reading but not in math. One year later, only 7 of the target children were in regular classes and were reported to need no supplementary services. (8 refs.)

Psychiatry Department Center for Health Sciences UCLA Medical School Los Angeles, California 90024

1355 PARKER, THERESE B.; FRESTON, CYRUS W.; & DREW, CLIFFORD J. Comparison of verbal performance of normal and learning disabled children as a function of input organization. *Journal of Learning Disabilities*, 8(6):386-393, 1975.

A quasi-experimental design was used to examine free recall performance of 30 learning disabled (LD) children (defined in terms of a behavioral, educational model) as a function of organization of material and level of difficulty. When measured against 30 normal Ss, LDs exhibited a significant deficiency in recall performance. The amount of recall in normal Ss was influenced by both material organization and level of material, but only level of difficulty influenced recall in LDs. Findings substantiate data in a group of LD students defined in terms of an etiological, medical model (Freston and Drew, 1974). LDs seem to be unable to take mnemonic advantage of externally organized material and need remediation which focuses on the short-term deficits and facilitates long-term memory or learning. (25 refs.)

Department of Education University of Utah Salt Lake City, Utah 84112

1356 LEONARD, LAWRENCE B. Developmental considerations in the management of language disabled children. *Journal of Learning Disabilities*, 8(4):232-237, 1975.

A preliminary study has indicated that language training based on normal stages of development may accelerate the rate of learning in children with language learning disabilities. Through a counterbalanced design, 8 children (5 to 9 years old) were taught the use of grammatical structures 1) with a sequence representing a response hierarchy paralleling normal language acquisition, and 2) with a sequence with a response hierarchy based on increasing length. Both the developmental and additive sequences resulted in significantly greater use of the structures than was seen in controls. However, there was significantly greater post-training use of the grammatical structures with the sequence based on normal acquisition. In addition to requiring fewer responses to criterion, the developmental sequence resulted in a higher percentage of correct responses during the learning of the structures than was true for the additive sequence. The language problems of some children may not be perceptual; structures they perceive in others can often be incorporated into their speech through remediation. (18 refs.)

Audiology and Speech Pathology 807 Jefferson Avenue Memphis, Tennessee 38105

1357 WIIG, ELISABETH H.; & SEMEL, ELEANOR M. Productive language abilities in learning disabled adolescents. *Journal of Learning Disabilities*, 8(9):578-586, 1975. d

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The speed and accuracy of 32 learning disabled (LD) and 32 academically achieving adolescents were compared in 3 productive language tasks, and speech characteristics were examined for both groups. Ss were asked to 1) name verbal opposites, pictoral presentations, and members of the classes Foods, Animals and Toys; 2) produce sentences when given stimulus words; and 3) define words. In naming opposites and pictures, LDs were significantly slower and less accurate than controls. They also named significantly fewer foods, produced more agrammatical sentences and shorter grammatical sentences, were slower in producing sentences, and gave more incorrect definitions of words. Reductions in productive language by LDs observed on standard tests were substantiated by ratings of speech characteristics in conversation. Productive language deficits in this group may be related to previously observed deficits in language processing in LDs. Intervention strategies should facilitate efficient and accurate word retrieval. (28 refs.)

Department of Speech Pathology and Audiology Boston University University Road Boston, Massachusetts 02215

1358 HYMAN, JOAN; & COHEN, S. ALAN. The effect of verticality as a stimulus property on the letter discrimination of young children. *Journal of Learning Disabilities*, 8(2):98-107, 1975.

The possibility of a causal relationship between the strength of the vertical aspect of the letter and the number of reversals in reading behavior was investigated in a randomly selected group of 180 kindergarteners. Ss were given 1 of 4 visual matching of letters tasks which included: 1) matching letters containing both vertical and directional aspects (p to p, q, b, d); 2) matching letters containing directional aspects only (c to c, u, n); 3) matching task 1 letters with strength of the vertical element reduced; and 4) matching task 1 letters with strength of the directional aspect reduced. Results revealed that the vertical properties of letters used in the first task influenced letter reversal behavior. Reduction of the dominance of the vertical aspects of these letters resulted in marked reductions in reversal errors. An attraction to the vertical seems to intensify the effect of a weak sense of directionality. From a practical viewpoint, it appears wiser to pursue controlling the effect of the vertical aspect than to train children in directionality. (63 refs.)

Educational Systems Division Random House, Inc. 201 E. 50th Street New York, New York 10022

1359 LAING, ALICE F. Social skills for slow learners. Special Education: Forward Trends, 2(1):27-28, 1975.

Interpersonal skills should be an important aspect of programs for slow learners. Communication deficiencies and inability to react in a predictable way are among the factors which lead to nonacceptance of slow learners by peers. Rejection leads to a vicious cycle in which opportunities for improving social skills are reduced. Insufficient awareness of the self as a person is one of the main sources of social difficulties experienced by many slow learners. Classroom techniques which may help slow learners to develop social maturity include the teacher's deliberate structuring of groups to include unpopular and popular children; careful planning of discussion sessions; and allocation of specific functions to group members in working groups. Although role playing has often been suggested as a procedure for improving social adequacy, it may not be suitable for slow learners. It is important that the teacher be aware of interpersonal relationship problems faced by slow learners, particulary those who are segregated in special classes or schools. (14 refs.)

Department of Education University College of Swansea Swansea, England

1360 WIRTENBERG, THELMA J.; & FAW, TERRY T. The development of learning sets in adequate and retarded readers. Journal of Learning Disabilities, 8(5):304-307, 1975.

Potential developmental changes in learning set performance were examined in MR and adequate readers in 2 age groups (7 to 9 years old and 10 to 12 years old). Children were required to learn to consistently choose 1 of 2 nonsense syllables despite variations in 4 irrelevant dimensions and to generalize that solution to similar problems using different stimulus materials. Although MR readers were not deficient in their ability to solve the simple learning problem, they were deficient in their ability to generalize the solution to other problems. Younger children were inferior to older ones in their ability to generalize the solution, but the deficiency shown by MR readers did not change as a function of development. The deficiency of the MR reader in generalizing what has been learned in one problem to the solution of another was clearly demonstrated, but factors which underlie this deficit are still not understood. (2 refs.)

Psychology Department University of California at Los Angeles Los Angeles, California 90024 1361 SENF, GERALD; COMREY, ANDREW State initiative in learning disabilities: Illinois' Project SCREEN, report 1: the SCREEN early identification procedure. Journal of Learning Disabilities, 8(7):451-457, 1975.

As part of a comprehensive study of learning disabilities funded by the State of Illinois, a multifaceted screening instrument (SCREEN) was designed and field tested. SCREEN includes both direct child assessment, ratings by teachers, and a service delivery system. Goals are to identify children with a high risk for encountering learning and adjustment problems in school; to provide teachers with a broader basis for making educational decisions about each pupil; and to focus on diagnostic follow-up services through structured diagnostic questions. SCREEN, which can be administered by personnel without special training, contains 4 child testing sessions and a teacher rating of pupil behavior scale. The 4 test modules contain subtests in self-concept and school adjustment; visual skills; auditory skills; figure copying; and basic knowledge. The specific nature of the diagnosis for each child is focused in an individualized report. A follow-up study of nearly 800 pupils will provide validity data. (3 refs.)

Psychology Department University of Illinois Chicago Circle Campus Chicago, Illinois 60680

1362 LOVITT, THOMAS. Applied behavior analysis and learning disabilities--part 1: characteristics of ABA, general recommendations, and methodological limitations. *Journal of Learning Disabilities*, 8(7):432-443, 1975.

Applied behavior analysis (ABA) is a procedure which defines and prescribes treatment for deviant behaviors as discrete units. ABA research is recommended which deals with the basic skills (reading, spelling, penmanship, arithmetic) of learning disabled children. As applied to curriculum research, ABA is characterized by direct measurement, daily measurement, replicable teaching procedures, individual analysis, and experimental control. Curriculum areas in which ABA research is greatly needed include: 1) defining the behaviors which comprise subject areas; 2) sequencing the elements of the subjects; 3) determining the most effective

techniques for changing certain skills; 4) determining performance mastery; 5) retention research; 6) generalization research; and 7) logistics research. Limitations of the system pertain to decisionaking about educational programs on the basis of data and the establishment of a stable and consistent research environment. (11 refs.)

Experimental Education Unit Child Development and Mental Retardation Center University of Washington Seattle, Washington

1363 MERCER, CECIL D.; CULLINAN, DOUG-LAS; HALLAHAN, DANIEL; & LA-FLEUR, N. KENNETH. Modeling and attention-retention in learning disabled children. Journal of Learning Disabilities, 8(7):444-450, 1975.

The relationships between modeling and attention-retention were investigated in 20 boys who were attending a residential school for learning disabled (LD) children. Ss were administered Hagen's central-incidental attention-retention task before viewing a video tape lasting 13 minutes and showing 2 models who sequentially demonstrated 20 behaviors. They were told that they would be paid money for performing the activities they viewed on the tape. Attention to and retention of relevant (versus irrelevant) stimuli were significantly related to modeling performance. High modelers did not differ significantly from low modelers, however, on incidental recalls. A significant correlation also existed between academic achievement and modeling ability, suggesting that the ability to model and the ability to achieve academically have common parameters. (25 refs.)

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College of Education University of Florida Gainesville, Florida 32601

1364 KIRK, SAMUEL A.; & ELKINS, JOHN. Identifying developmental discrepancies at the preschool level. *Journal of Learning Disabilities*, 8(7):417-419, 1975.

A procedure which uses the average deviation from the child's mean scaled on the Illinois Test of Psycholinguistic Abilities to determine significant developmental discrepancies in preschool children for learning disabilities is viable if false positives and false negatives are checked. A study of 101 Head Start children showed that 7 percent of the sample had learning disabilities, as compared to 3 percent of the average population. Of the 13 percent of the average population. Of the 13 children identified as learning disabled (average deviation of 6.0 or above), 1 was considered to have special learning abilities. Two children not identified as learning disabled were considered on the basis of record analysis to have special deficits requiring remediation, even though their average deviation was below 6.0. If facilities are available to examine the children, a screening procedure based on discrepancies between abilities and disabilities may be helpful. (1 ref.)

Department of Special Education University of Arizona Tucson, Arizona 85721

1365 DERUITER, JAMES A.; FERRELL, WILLIAM, R.; & KASS, CORRINE E. Learning disability classification by Bayesian aggregation of test results. *Journal of Learning Disabilities*, 8(6):365-372, 1975.

Preliminary tests on the feasibility of the Bayesian approach to screening for learning disability indicated that the method compared favorably with discriminant analysis in accuracy and was more easy to apply. A group of children with learning disability and a matched group without learning disability were administered tests related to component disabilities previously identified as being diagnostic. The Bayesian procedure was used to calculate the probability of learning disability in each child. Using 17 test scores, the Bayesian procedure classified 47 out of 50 Ss correctly, and discriminant analysis classified all Ss correctly. The 5 test scores found to be most diagnostic were used in the Bayesian procedure and yielded the same number of correct classification as all 17. Discriminant analysis using the same 5 scores resulted in 48 correct classifications. Although the discriminant analysis procedure classified Ss as least as well as the Bayesian method, the latter procedure has a number of advantages which could counterbalance differences in accuracy. (16 refs.)

Department of Special Education University of Arizona Tucson, Arizona 85721 1366 NISWANDER, KENNETH R.; GORDON, MYRON; & DRAGE, JOSEPH S. The effect of intrauterine hypoxia on the child surviving to 4 years. American Journal of Obstetrics and Gynecology, 121(7):892-899, 1975.

Although intrauterine hypoxia is a known cause of perinatal death, it does not seem to be a major cause of neurological dysfunction in children who survive. Outcomes of babies born to patients with abruptio placentae, placenta previa, and prolapse of the umbilical cord were compared with outcomes from computer-matched normal control patients to determine the degree of risk of lower 4-year Stanford-Binet intelligence quotient (IQ) scores or abnormalities on the 4-year fine motor and gross motor testings. There were no significant differences in mean IQ scores or motor performance of potentially hypoxic babies and babies of normal controls. But low birth weight babies in both groups exhibited lower IQs and higher risk of motor abnormalities than babies of mature birth weight. Sublethal insult may produce brain damage and cause apparent abnormalities in the neonatal period, but neuronal pathways may develop in subsequent months to circumvent damaged areas and effect clinical recovery. (13 refs.)

University of Calfiornia School of Medicine Department of Obstetrics and Gynecology Davis, California 95616

1367 COTTERELL, GILL. How Robert made headway. Special Education: Forward Trends, 2(3):17-19, 1975.

A boy with a minimal neurological dysfunction coupled with a hearing loss was able to succeed academically as a result of a 3-year program of systematic instruction designed around his specific disabilities. After enrollment in The Word Blind Research Centre at the age of 8, the child was exposed to various multisensory approaches to learning. Individual tutoring on a twice weekly basis utilized the Fernald method of word mastery (based on finger tracing) and several games designed to help him blend words. Because the boy had a short concentration span, a 45-minute lesson was planned to contain a variety of activities to maintain interest. When he was discharged from the center, at age 111/2, his performance on the Neale Test of Reading Ability was in the average

range. At age 18, the boy had completed his examinations satisfactorily and made plans to study dentisty. (6 refs.)

Psychological Service Suffolk School Suffolk, England

1368 SCHWARTZ, ARTHUR H.; & MURPHY, MICHAEL W. Cues for screening language disorders in preschool children. *Pediatrics*, 55(5):717-722, 1975.

A set of informal screening observations indicative of developmental language disabilities can be made by the pediatrician during office evaluation. A developmental language disability should be suspected if the child shows inaccuracies or inconsistencies in the ability to understand spoken language (comprehension) and/or the ability to produce spoken language (expression). Disruptions in language comprehension and expression may be characterized by an inability to (1) assign meaning to words, (2) organize words into sentences, (3) alter word forms to indicate tense, possession, or number, and (4) produce the speech sounds comprising the words of language. Even though a child may be reluctant to talk, sufficient information can be obtained directly or indirectly for a screening judgment regarding referral for a formal language assessment. The 1970 National Institute of Neurological Diseases and Stroke (NINDS) estimate that no less than 1 out of every 170 children has a developmental disability affecting language development suggests that 1 or more such children with this disability enter the pediatrician's office each week. Early detection and appropriate referral can maximize the possibility of improvement and minimize the residual effects of a language disability. (9 refs.)

Department of Biocommunication University of Alabama The Medical Center Birmingham, Alabama 35294

1369 SEMEL, ELEANOR; & WIIG, ELISA-BETH H. Comprehension of syntactic structures and critical verbal elements by children with learning disabilities. *Journal* of Learning Disabilities, 8(1):46-51, 1975. Comprehension and expression of syntactic structure and the comprehension of critical verbal elements were assessed in 34 children with learning disabilities (LD). Their performances on the Northwestern Screening Test (NSST) and the Assessment of Children's Language Comprehension (ACLC) were compared with normative data and scores of 17 academically achieving controls. LD children showed significant quantitative reductions in both comprehension and expression of syntactic structures. A significant percentage of LDs also scored below the tenth percentile on both receptive and expressive subtests of the NSST. Performances of LDs (ages 7 to 11) on the ACLC were similar to those of normative 61/2-yearolds, while controls showed a ceiling effect. Significant differences were not found between scores of younger and older subgroups of LD children. Both the NSST and the ACLC may be useful for screening and identifying language comprehension deficits in LD children. These deficits may reflect 3 types of delays in learning and memory. (19 refs.)

Boston University 31 Gibbs Street Brookline, Massachusetts 02146

1370 KERSHNER, JOHN R. Visual-spatial organization and reading: support for a cognitive-developmental interpretation. Journal of Learning Disabilities, 8(1):30-36, 1975.

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An investigation of cognitive spatial and visualperceptual skills in 7-year-olds in an intact second grade class suggested that perceptual skills have little, if any, bearing on reading at this age. Students were divided into low and high groups on the basis of the Frostig Developmental Test of Visual Perception and the Conservation of Multiple Space Relations Test (Kershner, 1970) and tested on their reading ability. Cognitive spatial ability was better than visual perceptual ability in differentiating between good and poorer readers. Visual-perceptual skills measured by the Frostig test were insufficient for advanced reading at the grade 2 level and an unnecessary requirement for high reading ability. Where perceptual skills are lacking, cognitive strategies can compensate and provide the child with the competence necessary for successful reading. Results clearly question the prevailing concept of visual-perceptual disability and suggest the value of teaching nonverbal thinking strategies involving the mental representation and internal manipulation of spatial relations. (20 refs.)

Ontario Institute for Studies in Education 252 Bloor Street, W. Toronto, Ontario, Canada

1371 HARGIS, CHARLES H.; GICKLING, EDWARD E; & MAHMOUD, CATHY CROSSLAND. The effectiveness of TV in teaching sight words to students with learning disabilities. *Journal of Learning Disabilities*, 8(1):37-39, 1975.

A pilot study of 8 learning disabled (LD) children (7 to 9 years old) indicates that television is not effective for teaching sight words to LD students. Two separate sets of sight words were selected and matched on the basis of equivalent difficulty level prior to presentation of 1 set on a series of 32 daily programs on educational television ("The Electric Company"). No instruction was given relating to the second set. When each student was tested on ability to recognize both sets of sight words after television presentation, student scores were no higher on words presented through the program than for words on which there was no presentation. Since 5 of the students in the group had auditory discrimination problems, findings may reflect disadvantages of many LD children in dealing with learning situations that require extensive use of auditory skills. (4 refs.)

Department of Special Education University of Tennessee Knoxville, Tennessee 37916

1372 Meeting report: biochemistry on the horizon? Journal of Learning Disabilities, 8(1):56-57, 1975.

The promise of pharmacological, biochemical, and epidemiological research in the future understanding of dyslexia was held out at the twenty-fifth annual meeting of the Orton society, held in November 1974 in Rochester, Minnesota. Theoretical papers indicated the lack of definitive knowledge on language structure, neuroanatomy, memory, cognition, auditory and visual perception, and cross-modality learning in language/and or learning impaired individuals. An address by Macdonald Critchley, president of the World Federation of Neurology, suggested that research on myelination and/or neurohumoral transmitters may reveal maturational factors related to the etiology, reversal, or remediation of dyslexia.

1373 KEELE, DOMAN K.; KEELE, MARJORIE S.; HUIZINGA, RALEIGH J.; BRAY, NANCI; ESTES, ROBERT; & HOLLAND, LANA. Role of special pediatric evaluation in the evaluation of a child with learning disabilities. Journal of Learning Disabilities, 8(1):40-45, 1975.

Two studies suggested the value of special pediatric evaluation in learning disabled (LD) children. In study I, 60 children (both LD and non-LD) were chosen at random for evaluation. On the basis of 9 pediatric factors, 2 pediatric specialists with expertise in LD correctly diagnosed LD in 91 percent of the cases evaluated. The pediatricians also diagnosed LD in a significant number of children (30 percent) not considered to be LD by a multidisciplinary team. LD children exhibited a significantly higher percentage of high risk conditions for brain damage or dysfunction in their medical histories, minor neurological dysfunction, obesity, teacher and parent reports of LD, poorly drawn 2-dimensional figures, and delayed word recognition. In study II, similar pediatric findings were noted in 20 Ss thought to be LD by school personnel. In the LD child with motor hyperactivity and certain other indications, evaluation by a pediatric specialist is recommended. (16 refs.)

Research and Evaluation Center for Learning 3801 Herschel Dallas, Texas 75219

DEVELOPMENTAL ASPECTS - Social and Emotional

1374 ELGAR, SYBIL. First year at Somerset Court. Special Education: Forward Trends, 2(2):14-15, 1975.

The first residential center for autistic adolescents in the United Kingdom was established in 1974. The 23 residents, who have a wide range of abilities, are offered individual programs of education, with social and work experience tailored to each one's needs and abilities. Goals of teaching are independence, social competence, a sense of responsibility, punctuality, and the ability to work well and reliably with a minimum of supervision. Although all the children have learning and social problems they are given the opportunity to continue their education on all levels and to cope with and enjoy leisure time. The center has been well accepted in the community, and some children participate in social and employment activities in the neighborhood, Separate programs are arranged for children who cannot tolerate the approach of other people or participate in normal social situations. A major problem in the center operation is imbalance, with too many disruptive and noncontributing adolescents not able to profit from learning or social situations.

1375 CICCHETTI, DANTE; & SROUFE, L. ALAN. The relationship between affective and cognitive development in Down's syndrome infants. Resources in Education (ERIC), 11(5):92, 1976. 14 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112557.

In a study of the relationship between affective and cognitive development in 14 Down's syndrome infants, a definite association was found between cognitive and affective development, especially with respect to stages of object permanence and operational causality. The infant's mothers gave their children a series of 30 laughter items once a month, and experimenters administered the Uzgiris-Hunt scales of cognitive development when the Ss were 13 and 16 months old.

At 16 months, the Bayley scales and Infant Behavior Record were recorded. The Down's syndrome infants followed the order of laughter items as expected for normal children (laughter was first elicited by auditory and tactile items, and then by social and visual items, which were more cognitively complicated), but the onset of laughter and smiling was significantly later than that observed in normals.

1376 BAKER, G. P.; & RASKIN, L. M. Kinetic-Family-Drawing of kindergarten and first grade children with delayed perceptual and motor development. Resources in Education (ERIC), 11(5):101, 1976. 8 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No ED112619.

Fifty kindergarten or first grade children with delayed perceptual and/or motor development and 50 control children were asked to make Kinetic-Family-Drawings in a study of the validity of this method as a measure of the socio-emotional characters of high-risk low achievers. Each subject drew himself and all of the members of his family in the act of doing something, and the criteria of isolation, bodily concerns, and rivalry were used to rate the drawings. Analysis of the drawings showed that children with delayed perceptual and/or motor development had a greater sense of isolation and bodily concern than control subjects, but that rivalry did not discriminate between the 2 groups of children.

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1377 BARAN, STANLEY J.; & MEYER, TIMOTHY P. Retarded children's perceptions of favorite television characters as behavioral models. Mental Retardation, 13(4):28-31, 1975.

The increasing importance of peers and television as socializing agents of children is supported by a study of 70 TMRs (mean age 14 years). Ss were

presented with 4 hypothetical situations and asked to respond in terms of what their parents would want them to do, what was the right thing to do, what their best friends would do, and what their favorite television characters would do. The strongest relationships existed between how the children reported they would behave, how their best friends would behave, and how television characters would behave. Findings were similar to data on television effects obtained with non-MRs. However, the role of television models may be more pronounced for MRs. It is important to assure MR children exposure to appropriate television models through the development of attractive instructional material. (13 refs.)

Department of Mass Communication Cleveland State University Cleveland, Ohio 44115

1378 TAYLOR, JONATHAN J.; & ACHEN-BACH, THOMAS M. Moral and cognitive development in retarded and nonretarded children. American Journal of Mental Deficiency, 80(1):43-50, 1975.

Measures of moral judgment and cognitive operations were administered to 30 cultural familially MR and 30 non-MR children matched for MA within 3 MA levels, Kohlberg (1971) hypothesized that a particular stage of cognitive development constitutes a necessary but not a sufficient condition for each moral stage. Both moral and cognitive performance improved with MA, but there were no differences between the MA-matched MR and non-MR children. Moral judgment was more strongly related to MA than to any of the specific cognitive operations which were assessed. Moral judgment of older children was not more advanced than that of younger children matched for cognitive level. However, findings, supported the "developmental" concept of cultural-familial MR proposed by Zigler (1969). (19 refs.)

Department of Psychology Yale University New Haven, Connecticut 06510

1379 CROCKETT, DARLENE; & GUTHRIE, LARRY F. A comparison of self-concept between EMR and non-EMR students. Resources in Education (ERIC), 11(5):99, 1976. 39 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112604.

Twenty EMR junior high school boys in special classes were compared to 20 non-EMR junior high school boys in regular classes in terms of their responses to the Piers-Harris Children's Self-Concept Scale and the "How I See Myself" Scale by I. Gordon. Relationships were examined between Ss IQ scores and reading grade levels and their self-concepts. Findings demonstrate that EMRs tended to have more negative self-concepts than non-EMR subjects, but the differences were not significant. There was no relationship between IQ and self-concept among EMRs, but there was a low positive relationship between self-concept and reading level. Non-EMR students demonstrated a high positive relationship between IQ and self-concept and a low positive relationship between reading and self-concept.

1380 ORNITZ, EDWARD M.; & RITVO, EDWARD R. Medical assessment. In: Ritvo, E. R.; Freeman, B. J.; Ornitz, E. M.; & Tanguay, P E., eds. Autism: Diagnosis, Current Research, and Management. New York: Spectrum Publications, Inc., 1976, pp. 7-23.

The current state of understanding of autism is expressed in 12 conclusions. Autism is a clinically and behaviorally defined specific syndrome; it is manifested at birth or shortly afterwards and remains throughout the lifetime of the patient; an underlying neuropathophysiologic process affects developmental rate, sensorimotor integration, language, cognitive and intellectual development, and ability to relate; no known factors in the psychological environment cause autism; patients demonstrate before the age of 36 months specific disturbances of developmental rate, perception, relatedness, and language; it occurs idiopathically or in conjunction with other diseases that affect the central nervous system; it afflicts children in all parts of the world; there is no etiologicallybased rational treatment; complete medical and neurological evaluations are necessary to establish diagnosis; in most cases supportive therapies are helpful; long-term prognosis is guarded; and further research is needed to develop a rational therapy. (61 refs.)

1381 RITVO, EDWARD R. Autism -- from adjective to noun. In: Ritvo, E. R.; Freeman, B. J.; Ornitz, E. M.; & Tanguay, P. E., eds. Autism: Diagnosis, Current Research, and Management. New York: Spectrum Publications, Inc., 1976, pp. 3-6.

A brief history of concepts of autism is given and the relation between clinical treatments of the syndrome and theoretical conceptualizations indicated. Efforts to develop a phenomenologicallybased description of the disease led to a model similar to that for epilepsy, positing a dysfunction of the central nervous system, with personality deficits observed considered secondary to organic brain pathology, which could be caused by a variety of agents. Since symptoms of the disease fluctuated over time and in degrees, it was considered most likely that autism involved the modulation of regulation circuits within the central nervous system. Hypotheses were formed on this basis and experiments devised to test them. Evidence indicates that autism is a physical disease of the brain that interferes with developmental rate and the modulation or integration of sensory input within the brain. These disturbances then lead to disturbances of motility, language, and personality development expressed by psychosis and the inability to relate to others. (12 refs.)

1382 WODRICH, DAVID LANE. Self-concept and academic achievement among educable mentally retarded pupils. Dissertation Abstracts International, 36(6):3532A-3533A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,494.

Seventy-five EMR pupils were administered the Piers-Harris Children's Self-Concept Scale, the Laurelton Self-Attitude Scale, and the Metropolitan Achievement Test twice, with a 4-month interval between administrations. Statistical results suggested that neither self-concept nor achievement was causally preponderant to the other, that self-concept and achievement were only weakly related regardless of whether IQ effects were controlled, and that self-concept measures contributed little to the prediction of achievement when used in conjunction with other variables. The weak association between self-concept and achievement was contrary to most previous findings in the literature.

Arizona State University Tempe, Arizona 1383 BERSON, BRYNA SKOLNICK. An investigation of the relationship between social behavior, perception of self, and perception of parental behavior for educable mentally retarded adolescents. *Dissertation Abstracts International*, 36(6):3558A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-27,052.

One hundred and seventy-one EMR adolescents (CA 12 to 19 years) in 20 special classes were administered the Piers-Harris Children's Self-Concept Scale and, 1 week later, the Children's Reports of Parental Behavior Inventory (by Schaefer), and their teachers were given the Pittsburgh Adjustment Survey Scale (by Ross, Lacey, and Parton) to rate the social behavior of each S. The obtained data were subjected to stepwise multiple regression analysis. Four specific problems were investigated. Teacher-perceived aggressive behavior was found to be significantly related to sex, self-perceived behavior and anxiety, and perception of parental control. Teacher-perceived withdrawn behavior was shown to be significantly related to self-perceived anxiety and popularity and to perception of parental autonomy. A positive correlation was found between self-perceived behavior scores and prosocial scores as perceived by the teacher. The data failed to support any relationship between teacher-rated passive-aggressive behavior, self-reported self-concept, and perception of parental behavior among the EMR students.

Columbia University New York, New York

1384 CHAMBERLIN, ROBERT W. Parental use of "positive contact" in child-rearing: its relationship to child behavior patterns and other variables. *Pediatrics* 56(5):768-773, 1975.

Home observations of a subsample of 36 mothers who responded to an interview on child rearing styles indicated that several situational variables are related to high maternal use of "positive contact." Mothers who scored above the mean on a score derived from reported frequency of playing with, praising, or hugging their 2-year-old children were more highly educated than low scoring mothers. Children whose mothers frequently used positive contact were more frequently only or oldest children; they were significantly more friendly and outgoing than children whose

mothers used little positive contact. Maternal attitudes regarding physical punishment, protectiveness, or other child rearing techniques were not related to the degree of positive contact. Parent education stressing positive contact (especially with later born children in large families) may be a practical means of stimulating more positive contact. (16 refs.)

Department of Pediatrics University of Rochester School of Medicine 260 Crittenden Boulevard Rochester, New York 14642

1385 COLE, STELLA R. An appraisal of personhood for severely retarded adolescents. Dissertation Abstracts International, 36(6):3560A-3561A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-29,376.

The relationship between the perception of SMR adolescents as having personhood and their development into more capable human beings was investigated with groups of Ss (CA 15 to 21 years) formed from students in a public school program for SMRs. All data were secured from Cole's Profile of Personhood and the Conversation Monitoring Form, which correlated significantly. Four major conclusions were drawn. The SMR adolescent was found to have personhood as appraised by Cole's Profile. The SMR Ss used in this study arranged themselves along a continuum towards personhood. The .79 correlation between the employed instruments forecasted the strength of Cole's Profile as an instrument revealing personhood. Further study in the area of personhood clearly was indicated. The study showed that the SMR adolescent has an identifiable quality of personhood. This finding is important, since SMR adolescents usually are regarded as damaged things rather than as possibly functioning human beings.

1386 LONEY, JAN; COMLY, HUNTER H.; & SIMON, BETTY. Parent management, self-concept, and drug response in minimal brain dysfunction. *Journal of Learning Disabilities*, 8(3):187-190, 1975.

Three hypotheses relating to the effects of parental management on self-esteem, impulse control, and drug response of boys with minimal brain

dysfunction (MBD) were examined in 60 MBD boys and age-matched controls. A projective cardrawing task was used to assess self-concept and impulse control. Regardless of the quality of parental management, MBD boys demonstrated less self-esteem than normal boys, but MBD boys with good parental management (GM) demonstrated smaller decrements in feelings of self-worth than boys with poor management (PM). The 2 groups of MBD children did not differ significantly from one another in impulse control, but both groups exhibited less impulse control than normals. Parental management in MBD children was related to response to medication, with 72 percent of the GM group and 40 percent of the PM group responding positively to stimulant drugs. Secondary problems in PM children with MBD are not as easily influenced by medication as problems with attention, coordination, and perception shared by the total group. (7 refs.)

Department of Psychiatry University of Iowa 500 Newton Road Iowa City, Iowa 52242

1387 BENTOVIM, ARNON; & CONNOLLY, KEVIN. Deprivation -- and acceleration. Special Education: Forward Trends, 2(2):16, 1975.

Two questions are posed relating to handicapped children: 1) whether insufficient physical handling of handicapped children can have a detrimental effect on the mother/child relationship; and 2) whether accelerating the development of one skill can result in retarding the development of others. Current research indicates that isolation and early separation from parents may in part be responsible for the social failure and sensitivity of some handicapped children. The reestablishment of normal social relationships in the context of child care may be necessary for renewing trust. A brief answer to the second question indicates that if a specific program of training inhibits development of a particular skill, resulting retardation will probably be transitory.

Sheffield University Sheffield S102TN, England 1388 MASON, CHRISTINE. Autistic children at home: a review of some books about individual children. In: Everard, M. P., ed. An Approach to Teaching Autistic Children. Oxford, England: Pergamon Press, 1976, Chapter 8, pp. 133-147.

A number of books written by parents about their own autistic children are reviewed. Bartje, My Son, by Nel van Houten, concerns a boy who was not classically autistic but who manifested difficult behavior and problems with language, although he learned to converse and even had imaginative play at a simple level. The Siege, by Clara Claiborne Park, points up the extreme withdrawal and passivity with which her daughter Elly first reacted to her autistic handicaps and the difficulties her parents faced in motivating her to perform even the simplest actions of daily living. When she did begin to make progress, she demonstrated a high level of ability in certain areas, including numerical calculation. The Small Outsider, by Joan Martin Hundley, describes an extremely difficult child during the first 6 years of life, the management of whose behavior was complicated by his severe allergies. The Fugitive Mind, by Peter Rowlands, follows the development from birth until 9 years of age of a son who fitted the picture of the typical autistic child almost exactly. For the Love of Ann, a book based upon a diary kept by Ann's father, describes her development in adolescence and early adult life and the remarkable progress she had made by age 21, although she was still handicapped. All of the accounts indicate the great need for improvement in every aspect of the services provided for autistic individuals and their families.

Hilda Lewis House 579, Wickham Road Shirley, Croydon, Surrey, England

GOULD, JUDITH. Assessment: the role of the psychologist. In: Everard, M. P., ed. An Approach to Teaching Autistic Children.
 Oxford, England: Pergamon Press, 1976, Chapter 3, pp. 31-52.

The role of the psychologist in the assessment of the autistic child is to examine all kinds of mental functions, including cognitive, linguistic, perceptual, motor and social skills, by using special tests. An important part of this process is to estimate the level of development any individual child has reached in each of these functions as compared with that expected in normal children. Some standardized test batteries for measuring IO are useful in providing an overall view of the impairments and skills of the autistic child. Behavioral disturbances or lack of appropriate teaching may make a child appear MR on clinical observation, but skillful testing may elicit unsuspected abilities. Specialized tests should be employed to explore specific problems which clinical observations suggest may be an important part of the picture. Often the only way to measure an autistic child's true level of performance on nonlanguage-dependent skills is to use the operant techniques of concrete demonstration, prompting, and rewarding as a preliminary to testing. Recent research has yielded some tests devised specifically with the needs of autistic children in mind.

Medical Research Council Social Psychiatry Unit Institute of Psychiatry De Crespigny Park London, S.E.5, England

HEMSLEY, ROSEMARY; & HOWLIN, PATRICIA. Management of behaviour problems. In: Everard, M. P., ed. An Approach to Teaching Autistic Children. Oxford, England: Pergamon Press, 1976, Chapter 4, pp. 53-78.

An individual treatment approach to the behavior problems shown by autistic children involves a specialized analysis of these problems, based upon the teacher's own observations of each child. The effect of the teaching situation as a whole on the child's behavior must be considered. The level of skill each child possesses in the various areas of ability should be assessed as accurately as possible, and the teaching environment should then be organized so that specific skills can be encouraged actively and appropriate behaviors will be more likely to occur. New tasks, whether simple or complex, should be broken down into smaller stages, each of which can be taught individually. Monitoring is essential in order to show how a behavior is changing. Just as undesirable behaviors can be controlled by careful structuring of the child's environment, desirable behaviors, too, can be fostered and skills can be built up. In the establishment of any management program for

autistic children, the need for close contact between teachers and others involved in the child's care should receive proper consideration.

Institute of Psychiatry De Crespigny Park London, S.E.5, England

1391 BARTAK, LAWRENCE; & PICKERING, GEOFFREY. Aims and methods of teaching. In: Everard, M. P., ed. An Approach to Teaching Autistic Children. Oxford, England: Pergamon Press, 1976, Chapter 5, p. 79-98.

Evaluation of the autistic child's present characteristics will be essential to setting up immediate or short-term aims in teaching. In order to monitor progress, goals must be specified in very precise terms, and they must be set systematically for all aspects of the child's behavior. To ensure maximum reliability and validity of information, behavior should be described using a standardized system. Structured teaching, which amounts basically to a structuring of the child's responses and of the stimuli that may impinge upon him, has been found to be more efficient in producing improvement in autistic children than less structured methods. To be useful, however, structured teaching must be of relevant material. Motivation of teachers and autistic children alike is an integral aspect of any teaching program. The success of progress evaluations will depend upon the adoption of the principles and methods outlined above.

Faculty of Education Monash University Victoria 3168, Australia

1392 TAYLOR, JOAN. Language problems and a method of assessment and teaching. In: Everard, M. P., ed. An Approach to Teaching Autistic Children. Oxford, England, Pergamon Press, 1976, Chapter 6, p. 99-119.

The optimum method for helping language disordered children to learn emphasizes careful planning of the remedial program, so that the child is presented with a succession of steps progressing from very easy to harder. The situation should constantly be so managed that the child gets the maximum benefit. The role of the adult is crucial

to the success or failure of a method which seeks to establish a working set for the child, for this can be done only if the child is allowed to do the work. The adult's role is neither that of instructor nor educator, but, alternatively, of a teaching machine, player, or encouraging friend. Descriptions of selected examples of activities used with language disordered children, with explanations of why the activities were found to be useful, illustrate an attempt to set forth the principles underlying a method of presenting a remedial program. The series of activities includes tasks concerned with making simple order, working to rules, making statements about objects, and the actual building of concepts.

Language Unit, Charles Burns Clinic Queensbridge Road Birmingham 13, England

1393 EVERARD, MARGARET P., ed. An Approach to Teaching Autistic Children. Oxford, England: Pergamon Press, 1976, 158 pp. (Price unknown.)

Advice on the day-to-day behavior management and teaching of autistic children is provided in terms of a program of education and management adjusted realistically to the potential of each child. Not only does autism vary in severity, but the many features which together make up the syndrome of autism are not found in equal proportions in every child. Moreover, autism can be allied with other handicaps, such as deafness, epilepsy, and spasticity. Once it is recognized that the basic problem lies in the lack of ability to understand what is happening around them and a difficulty in communicating flexibly and creatively, it is easier to distinguish the shared impairment of these children and to provide guidance on coping with daily problems. (55 refs.)

CONTENTS: Problems of Diagnosis and Classification (Wing); Assessment: The Role of the Teacher (Wing); Assessment: The Role of the Psychologist (Gould); Management of Behaviour Problems (Hemsley & Howlin); Aims and Methods of Teaching (Bartak & Pickering); Language Problems and a Method of Assessment and Teaching (Taylor); Organization of a School for Autistic Children (Elgar); Autistic Children at Home: A Review of Some Books about Individual Children (Mason).

1394 WING, LORNA. Problems of diagnosis and classification. In: Everard, M. P., éd. An Approach to Teaching Autistic Children. Oxford, England: Pergamon Press, 1976, Chapter 1, pp. 1-13.

The description of the autistic syndrome is generally difficult to apply in practice, but a scheme of characteristic impairments, special skills, and behavior problems can provide a foundation for a descriptive diagnosis. Among the handicaps of autistic children, basic impairments include language problems, abnormal responses to sensory experiences, abnormalities of visual inspection, problems of motor imitation and motor control, and various abnormalities of autonomic function and physical development. Skills that do not involve language and an unusual form of memory which seems to allow the prolonged storage of items in the exact form in which they were first perceived contrast with the lack of skill in other areas. Secondary behavior problems consist of an apparent aloofness and indifference to other people, especially other children, resistance to change and attachment to objects and routines, inappropriate emotional reactions, poverty of imagination, and socially immature and difficult behavior. In practice, the specific impairments, special skills, and behavior problems shown by the child, not the label given to him, determine the prescription of education.

Medical Research Council Social Psychiatry Unit Institute of Psychiatry De Crespigny Park London, S.E.5, England

1395 MAHER, KEVIN R.; HARPER, JULIET F.; MACLEAY, ALLEN; & KING, MAURICE G. Peculiarities in the endocrine response to insulin stress in early infantile autism. Journal of Nervous and Mental Disease, 161(3):180-184, 1975.

The action of the neuroendocrine system of autistic children in stressful situations was investigated to determine whether such children show abnormalities in their endocrine response to stressors consistent with their abnormal behavioral responses. Plasma concentrations of cortisol and serum concentrations of growth hormone and glucose were assayed in 11 children with early infantile autism following the stress of insulin-

induced hypoglycemia: 11 subnormal children served as controls. The group means of resting glucose, growth hormone, and cortisol levels for autistic and control groups, respectively, were for glucose 82 and 81mg percent; for cortisol, 12.6 and 9.2µg/100ml; for growth hormone 8.5 and 8.8ng/ml, respectively. No statistically significant differences were detected in resting levels for each substance between the 2 groups of children. Despite apparent normality in the resting state of endocrine function, it would appear that important functional irregularities occur when autistic children are stressed. So far as cortisol response was concerned, autistic children seemed to overreact to the insulin stressor; the over-reaction did not seem to be efficient in redressing the loss of blood glucose. This over-reaction might be interpreted as a response to the observed relativeinefficiency of blood glucose stabilization, which may contribute to an explanation of the abnormal behavioral responses of autistic children in stressful situations. (15 refs.)

Department of Psychology University of Newcastle New South Wales 2308, Australia

1396 HAUSER, STEPHEN L.; DELONG, G. ROBERT; & *ROSMAN, N. PAUL. Pneumographic findings in the infantile autism syndrome. *Brain*, 98:667-688, 1975.

An attempt was made to relate recognized anatomical abnormalities, especially consistent changes in pneumoencephalography, in 17 children with early infantile autism to known clincial manifestations. Two central criteria were failure of normal development of communicative language and gross and sustained impairment in emotional relationships. The single consistent abnormality found in laboratory investigation was in the pneumoencephalograms. Fifteen of 17 cases demonstrated some enlargement of the left lateral ventricle with respect to the right, particularly enlargement of the left temporal horn. Arguments are presented to support a relationship between infantile autism and recognized patterns of temporal lobe disease. The widened left temporal horn was in many patients attributable at least in part to a distinct flattening of the normal hippocampal contour, which in adults would produce a clinical picture indistinguishable from Korsakoff's psychosis. The social isolation of the autistic child, his aimless hyperexploratory behavior, "psychic blindness,"

monotonal, perseverative, noncommunicative language, and frequent oral and hypersexual tendencies are features analogous to those seen in the Kluver-Bucy syndrome in adults and probably reflect a similar underlying neuropathology. The known susceptiblity of medial temporal lobes to ischemic-hypoxic damage (significantly high in this

population), combined with these features, seems to implicate medial temporal lobe structures in the pathogenesis of infantile autism. (58 refs.)

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DEVELOPMENTAL ASPECTS - Psychodiagnostics

1397 PROGER, BARTON B. Trends and patterns in achievement test results and baseline expectancy data for future performance: programs for emotionally disturbed children, physically handicapped children, learning ,disabled children, and children with minimal brain injury. Annual program evaluation report 1973-1974. Resources in Education (ERIC), 11(5):100, 1976. 278 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$14.59, plus postage. Order No. EDI12613.

Handicapped children in 4 Montgomery County, Pennsylvania, programs for the handicapped were administered the Stanford Achievement Test during 1973-1974. Ss were physically handicapped, emotionally disturbed, minimally brain injured, and learning disabled, and were divided according to individual intelligence test verbal scores, global age levels (elementary versus secondary), specific age levels, and pretest scores. Results of tests indicate that achievement patterns varied from less than 6 months to less than a year for each year of instruction. An attempt was made to determine realistic expectancy levels of performance for handicapped children based on these data.

1398 Indiana University. A comment on the testing of language development in retarded children. Technical report 1.22. Dever, Richard B. Bloomington, Indiana: Center for Innovation in Teaching the Handicapped, 1975. 14 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED111143.

Several tests intended to assess language development in MR children were examined, and possible areas for future research were explored. Previously developed measures of linguistic development in MR children (such as Berko's Test of Morphology) suffered from inadequate language definitions and invalid testing methods. The use of traditional linguistic analysis and the classification of the spontaneous utterances of young children may be productive areas for gathering data in future research.

1399 HALPERN, ANDREW S.; RAFFELD, PAUL; IRVIN, LARRY; & LINK, ROBERT. Measuring social and prevocational awareness in mildly retarded adolescents. *American Journal of Mental Deficiency*, 80(1):81-89, 1975.

The Social and Prevocational Information Battery, a instrument containing 9 subtests relating to 5 long-range goals of work study programs, was developed and normed on 1,100 secondary EMR programs in Oregon. Battery tests include jobsearch skills, job-related behavior, banking, budgeting, purchasing, home management, physical health care, hygiene and grooming, and functional signs. Subtests pertain to the long-range goals of employability, economic self-sufficiency, family living, personal habits, and communication. The battery, which is orally presented to eliminate the influence of reading ability on performance, is easy to administer, and relatively simple to score and interpret. Data concerning the standard error and measurement and predictive validity suggest that this instrument may be used for pupil screening, monitoring pupil progress, or evaluating programs. (7 refs.)

1400 BRAY, NANCI M.; ESTES, ROBERT E. Achievement screening with learning disabled children. *Resources in Education (ERIC)*, 11(5):95, 1976. 41 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112576.

The validity of the Peabody Individual Achievement Test (PIAT) for assessing the achievement of learning disabled children was tested. Ss were 152 learning disabled and 115 non-learning disabled children from 7 to 10 years of age. Correlations were examined between Ss' scores on the PIAT, the California Achievement Test (CAT), the Wide Range Achievement Test (WRAT), and the Metropolitan Achievement Test (MAT). The validity of the PIAT was confirmed by correlation with all 3 comparison measures. The lowest correlation was with the mathematics subtests, and the highest correlation was found with the WRAT. The PIAT may be most efficient for the assessment of individual children, since its format, which does not involve reading word problems in mathematics or writing out answers, considerably shortens the time required for its administration.

1401 Delta State College. Self-concept of the mentally retarded compared to other pupils of similar age. Richmond, Bert O., et al. Cleveland, Mississippi, 1975. 12 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED1111129.

Thirty four EMR children (mean age 11 years) were compared with 4 groups of age-matched normal children with regard to self-concept. The normal children tested included: 1) 34 fifth and sixth grade blacks in an all black school; 2) 32 fifth and sixth grade blacks in integrated class-rooms; 3) 31 sixth grade whites in an all white rural school; and 4) 31 fifth grade whites in an all white suburban school. Findings of the Coopersmith Self-Esteem Inventory, demonstrated that black Ss in a newly integrated classroom and EMR Ss had significantly lower self-concept scores than other Ss, suggesting that self-concept training is needed in compensatory programs.

1402 Saskatechewan University. Further analysis of the structure of the devised Illinois Test of Psycholinguistic Abilities for moderately mentally retarded children. Leong, C. K. Saskatoon, Saskatchewan: Institute of Child Guidance and Development, 1975. 24 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage, Order No. ED109858.

The structure of the Revised Illinois Test of Psycholinguistic Abilities (ITPA) for moderately MR children was factor analyzed to determine whether the subtests agreed with the theoretical model of communication channels, processes, and levels. Two studies were performed, using as subjects 98 and 59 moderately MR children with mean ages of 12 and 11 years, respectively. The first study concerned raw scores from the 10 ITPA subtests and Binet IQ scores; the second study factor analyzed the 10 ITPA subtests plus the Wechsler Intelligence Scale for Children (Verbal and Performance IQs), the Los Angeles Test of Perceptual-Motor Attributes, and the Draw-A-Person Test. Both studies supported the hypothesized channel separation in the model, without loss of generality.

1403 Oregon University. Social and Prevocational Information Battery. (Includes test book, user's guide, examiner's manual, technical report, answer key, and class record sheet). Halpern, Andrew; et al. Eugene, Oregon: Rehabilitation Research and Training Center in Mental Retardation, 1975. 144 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83, plus postage. Order No. ED120241.

The Social and Prevocational Information Battery (SPIB) is designed to test knowledge and abilities essential for successful adjustment of EMR students. The SPIB consists of 277 items administered orally to groups of up to 20 subjects; in order not to place reading deficient participants at an unfair disadvantage, the answer format consists of true-false or picture responses. The test covers 9 areas, including purchasing, budgeting, banking, job related behavior, job search skills, home management, health care, hygiene, and functional signs. The SPIB package includes a user's guide, an

examiner's guide with answer key, a discardable test book in both machine- and hand-scorable versions, a class record sheet, and a technical report with validity and reliability data and reference group information. Results indicate that SPIB is useful in screening, diagnosis, and program evaluation.

1404 FEATHERMAN, JUDY. Assessment of educational characteristics of severely and profoundly impaired school-age children. Dissertation Abstracts International, 36(6):3562A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,110.

The educational characteristics of 70 severely and profoundly impaired children (CA 4.5 to 21 years) previously excluded from public school programs were evaluated with a criterion-referenced, developmentally-sequenced, assessment teaching instrument (ATI). Ss had been either institutionalized (I group), living at home and receiving no training (HNT group), or living at home and receiving outside training (HOT group) prior to their admission to public school. Ss were observed and assessed in their instructional environment in terms of 15 descriptive characteristics (demographic variables), and their performance on more than 500 criterion behaviors was identified on the ATI in 1 of 6 modules (Preliminary Learning Behavior, Motor Development, Perceptual Development, Self-Help and Independence, Personal-Social Development, and Cognitive Development). The prior environmental experience groups were statistically equivalent on 11 of the 15 descriptors. Predictably, the I group performed significantly worse than the HOT group on all comparisons, with the exception of 1 submodule, and it performed significantly worse than the HNT group on the majority of comparisons. The predicted significantly better performance of the HOT group as compared with the HNT group occurred only on the Self-Help and Independence module and submodules and on 1 other submodule.

Temple University Philadelphia, Pennsylvania

1405 NEWCOMER, PHYLLIS; HARE, BETTY; HAMMILL, DONALD; & MCGETTIGAN, JAMES. Construct validity of the Illinois Test of Psycholinguistic Abilities. *Journal* of Learning Disabilities, 8(4):220-231, 1975.

The construct validity of the Illinois Test of Psycholinguistic Abilities (ITPA) was investigated because of its prevailing use in the differential diagnosis of learning disabilities. External reference tests were designed either to match the ITPA subtests on individual psycholinguistic variables but vary in content, or to differ only in channel of communication. The degree to which each subtest measured discrete, independent abilities and the extent to which these abilities represented constructs of the Osgood model of language behavior were indices of construct validity. The construct validity of the ITPA was generally confirmed. Discrete abilities were measured by 9 subtests, and 2 dimensions of the Osgood model (level of organization and process) were substantiated. Weaknesses regarding construct validity of the instrument appeared to relate primarily to the modality dimension, with channel concept having the least factorial independence. Although it has certain limitations, the ITPA seems to be a valuable tool for psycholinguistic diagnosis. (25 refs.)

Department of Special Education University of Texas Austin, Texas 78714

BADIAN, NATHLIE A.; & SERWER, BLANCHE L. The identification of highrisk children: a retrospective look at selection criteria. Journal of Learning Disabilities, 8(5):283-287, 1975.

Selection procedures based on Myklebust's definition of a learning disability as a discrepancy between achievement and potential were used to screen the kindergarten population of 2 lowermiddle-class schools (approximately 300 children). Criteria included a readiness test, knowledge of letter names, discrepancy between verbal and nonverbal ability, and intratest scatter and performance on a visual-motor copying test, Sixty-two children selected as high risk for learning disabilities achieved average scores on the Weschler Intelligence Scale for Children and the Illinois Test of Psycholinguistic Abilities (ITPA) at the beginning of first grade and the Metropolitan Achievement Test at the end of first grade. Myklebust's definition of a learning disability may not be valid for very young children. The kindergarten child's understanding of number concepts may be a good predictor of achievement. (19 refs.)

30 Myrtle Street Belmont, Massachusetts 02178

1407 TINNEY, FRANKLIN A. A comparison of the KeyMath Diagnostic Arithmetic Test and the California Arithmetic Test with learning disabled students. *Journal of Learning Disabilities*, 8(5):313-315, 1975.

The comparative advantages of 2 diagnostic arithmetic tests were investigated in 56 children enrolled in a diagnostic/remedial resource program for children with specific learning disabilities. The instruments were 1) the California Arithmetic Test (CAT), a group-administered test which is part of the California Achievement Test, and 2) the KeyMath Diagnostic Arithmetic Test, an individually administered test designed for use in kindergarten through grade 5 and suitable for older children in clinical and remedial settings. The KeyMath was as valid as the CAT for determining achievement levels; it offers some notable advantages over the CAT if testing is to be part of educational evaluation. It tests more of the current math curricula, requires neither reading nor writing, offers a simplified visual presentation, and allows the skilled diagnostician to observe behavior closely during administration. Further research is needed to determine the reliability of the KeyMath with learning disabled students in general and with learning disabled students separated according to specific disabilities, and to determine which aspects of the instrument might be questionable in relation to a child's specific language disability. (9 refs.)

Child Study Center Scaggsville School 11226 Route 216 Laurel, Maryland 20810

1408 ERICKSON, MARILYN T. The Z-score discrepancy method for identifying reading disabled children. *Journal of Learning Disabilities*, 8(5):308-312, 1975.

When 3 methods of identifying reading disabled children in school settings were compared, the Z-score method was more accurate than 2 other

methods in selecting children who were achieving at a level considerably below their potential. The Years Below and Bond and Tinker methods selected third grade children whose scores on the Slosson Intelligence Test (SIT) and the Slosson Oral Reading Test (SORT) were below the means for both of the 2 samples. The Z-score method identified children with SIT scores above the sample means and SORT scores below the sample means. The Bond and Tinker and Years Below methods identified essentially the same children; the Years Below method would be more economical than the Bond and Tinker method for identifying a school's lowest achievers. The Z-score method is an additional useful technique, but it cannot be assumed that the method will work equally well for any set of reading achievement and intelligence quotient scores. (6 refs.)

Psychology Department University of North Carolina Greensboro, North Carolina 27412

1409 WISSINK, JOHN F.; KASS, CORRINE E.; & *FERRELL, WILLIAM R. A Bayesian approach to the identification of children with learning disabilities. *Journal of Learning Disabilities*, 8(3):158-166, 1975.

Bayesian revision of probabilities was used as the basis of a preliminary study to determine an efficient method of screening for learning disabilities (LD). Forty potentially relevant component disabilities were identified, and subjective estimates of LD specialists were obtained which pertain to the relative importance of each component as an index of LD. Likelihood ratios were established for the existence and nonexistence of each deficit, and the potentially independent components with high diagnostic value were identified. The 5 component disabilities judged to have the highest diagnostic value were reading comprehension, attention, auditory-visual coordination, writing, and auditory speed of perception. Findings represent progress toward an iterative calculation of a posterior probability of LD for use as a screening tool for LD. (18 refs.)

*Dept. of Systems and Industrial Engineering University of Arizona Tucson, Arizona 85721 1410 BEATTY, JAMES R. The analysis of an instrument for screening learning disabilities, *Journal of Learning Disabilities*, 8(3):180-186, 1975.

The Classroom Screening Instrument (CSI) consists of factors which would be highly useful in early screening for learning disabilities. Scores collected from 400 children were thoroughly factor analyzed, and a new set of subscales was statistically determined for the instrument. Fortyeight of the original 80 items loaded on 10 factors, indicating the value of reducing the number of items necessary to locate common factors. Reduction of the test to 48 items substantially decreased the testing and scoring time and did not significantly affect data. Reliability coefficients obtained for the original group of children and a second sample of 100 children were high enough to warrant additional investigation of the revised instrument. (27 refs.)

School of Business Administration San Diego State University San Diego, California 92115

1411 KOPPITZ, ELIZABETH MUNSTERBERG Bender Gestalt Test, Visual Aural Digit Span Test and reading achievement. Journal of Learning Disabilities, 8(3):154-157, 1975.

The relationship of reading to Bender Gestalt and Visual Aural Digit Span (VADS) performance was explored in 2 groups of learning disabled children (CA 8 to 9) and a control group of average pupils. Learning disabled students were grouped according to whether or not they were able to read. Students with learning disabilities were differentiated from normal pupils by the Bender Test; however, findings did not differentiate between readers and nonreaders. The VADS test differentiated readers from nonreaders but could not discriminate between learning disabled and control Ss. The 2 instruments complement each other as screening instruments, the Bender being more closely related

to overall academic functioning and the VADS related to reading achievement. It is possible for an elementary school child with good visual perception and good oral recall to learn to read even when his visual motor integration (as measured by the Bender Test) is immature. (17 refs.)

Board of Cooperative Educational Services Yorktown Heights, New York

1412 MARDEL, CAROL; & GOLDENBERG, DOROTHEA. For prekindergarten screening information: DIAL. Journal of Learning Disabilities, 8(3):140-147, 1975.

The Developmental Indicators for the Assessment of Learning (DIAL) procedure was designed as a screening test for prekindergarten children with potential learning problems. DIAL incorporates all the essential elements found separately in other instruments and assesses the level of progression within 6 major areas of functioning (sensory capacity, motor skills, affective behaviors, social skills, conceptual skills, and language development) in developmental terms. Pilot and field testing of DIAL indicated that the child's performance improves with age on 118 out of 124 items in the preliminary battery. Analysis of data in terms of mode of input and output identifies strong and weak modalities and suggests future diagnostic efforts. Preliminary data from field tests indicated: 1) high reliability of DIAL as shown by retesting after 1 year; 2) higher performance of females than males on 15 selected items; and 3) the competence of paraprofessional staff in administering DIAL. Future recommendations include developmental screening programs for the total 3-5-year-old prekindergarten population and plotting of performance profiles over extended periods of time. (27 refs.)

Department of Special Education Northeastern University Bryn Mawr at St. Louis Avenue Chicago, Illinois

TREATMENT AND TRAINING ASPECTS — Educational

1413 ALOIA, GREGORY F. Effects of physical stigmata and labels on judgments of subnormality by preservice teachers. Mental Retardation, 13(6):17-21, 1975.

The influence of the MR label and the variable of physical attractiveness on individual judgments of subnormality was studied in 102 elementary education trainees. Ss were exposed to photographs of MR children with obvious signs of physical deformity or stigmata (unattractive photographs) and a set of photographs of regular classroom students who appeared to be normal (attractive). Descriptive statements attached to each photo identified the child as MR; identified the child as normal; or contained no label except age. The presence of severe physical stigmata significantly influenced the judgments of subnormality. Although the effect of the labeled MR condition displayed a trend in increasing judgments of subnormality, the use of the normal and neutral (no label) labeling conditions had similar effects on judgments of subnormality. The specific ways in which labeling interacts with other variables to influence outcomes on the child are still not clear. (19 refs.)

School of Education University of California Riverside, California 92502

1414 WOLFENSBERGER, WOLF. How to exclude mentally retarded children from school. *Mental Retardation*, 13(6):30-31, 1975. (Editorial)

Three compilations of defenses typically used by educators to support decisions to exclude MR children from school are reviewed. Typical defenses identified by the Pennsylvania Association for Retarded Citizens include staff limitations, insufficient funds, age restrictions, behavior or physical problems, or waiting lists. Similar defenses listed by Biklen (1974) include decision-making by others; opinions of experts; severity of handicap, and insufficient diagnostic data. A list published by the Task Force on Children out of

School categorizes defenses in terms of denial; exception; demurrer; confession and avoidance; improper jurisdiction; prematurity of request; generalized guilt; improper forum; recrimination; and further study. (3 refs.)

Division of Special Education and Rehabilitation Syracuse University New York, New York 13210

1415 Wisconsin University. Development of instructional materials for use by home economics teachers with EMR students. Horn, Fern M.; & Barsness, Anita O. Stevens Point, Wisconsin, 1975. 31 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112265.

The development, analysis, revision, and dissemination of curriculum materials designed to be used by home economics teachers for mainstreaming of EMR students was continued. Materials were field tested with all enrolled students in home economics classes where the specific content area was being taught. The materials were field tested with 28 different teachers, and were reassessed on the basis of data analysis and teachers' recommendations. In order to help teachers in the development and use of these materials, inservice programs and workshops were made available. The evaluation instrument is included in an appendix.

1416 Wisconsin University. Instructional Materials for Use with Educable Mentally Retarded Students Enrolled in Home Economics Classes. Horn, Fern M.; & Barsness, Anita O. Stevens Point, Wisconsin, 1975. 312 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$15.86, plus postage. Order No. ED112264.

Instructional materials designed to be used with EMR students in regular home economics classes are presented. Five substantive content areas are covered: foods and nutrition, consumer education, clothing and textiles, personal development, and child development. Teaching guidelines are provided, including performance objectives, instructional approaches, and instruction for evaluation. Various educational materials are also included, in the form of exercises, tests, games, illustrations, and handouts. Other instructional materials for use by home economics teachers with EMR students are described in a 68-page annotated bibliography.

1417 Minnesota University. Psychological Consultation: Helping Teachers Meet Special Needs, Parker, Clyde. Minneapolis, Minnesota, 1975. 270 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091. Price \$5.00. Order No. 107.

Ten papers contributed at a 1974 conference on the skills, problems, and roles of special education teachers and school psychologists in implementing the mainstreaming of handicapped children are presented. Topics covered include: student behavior change, illustrated by 4 case studies; a Vermont teacher consulting teacher program; a Houston systems approach to increasing teacher effectiveness; and a system of coordinate status consultation utilized to increase the effectiveness of a school organization. Theoretical consultation models described include: the triadic model; developmental constructs in a school setting; a systematic eclectic approach; a collaborative model based on mental health principles; and a process model. These models are discussed from a consumer's point of view by a school administra-

1418 ABERSON, ALAN; et al. A primer on due process: education decisions for handicapped children. Reston, Virginia: State-Federal Information Clearinghouse for Exceptional Children, 1975. 57 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091. Price \$4.95.

The requirements of due process in making education decisions for exceptional chuldren are presented. The background, major issues, and

intent of the application of due process requirements to the identification, evaluation, and educational placement of exceptional children are considered, with emphasis on the issues of exclusion and labeling. State and Federal rulings concerning due process are reviewed, including the case of the Pennsylvania Association for Retarded Children and a Federal mandate of due process (P.L. 93-380). Written notification of parents and a review of educational placement are among the recommended due process procedures to be followed by state and local education agencies, The selection, training, and responsibilities of hearing officers who may be called upon to decide disputes between public schools and families are discussed. In order to give children whose parents are unavailable representation in educational decision making, a parent surrogate approach is recommended.

1419 New Mexico State University. The Southwest Regional Resource Center; a Compilation in Retrospect. Final Technical Report. Las Cruces, New Mexico, 1975. 272 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$13.32, plus postage. Order No. ED107085.

Activities of the Southwest Regional Resource Center (SWRRC) from 1969 to 1974 are summarized, with emphasis on the improvement of education for handicapped children. New diagnostic testing procedures and experimental curricular materials were developed, and information was disseminated to regular and special education teachers. Direct inservice contact was provided between trained change agents and teachers, and diagnostic/prescriptive methods were assessed, Services were provided to the Bureau of Indian Affairs and to the states of Nevada, New Mexico, Colorado, and Arizona. The operational history of the SWRRC is reviewed, along with annual summaries of program operations by state. Outcomes are evaluated and suggestions are offered for ongoing Regional Resource Centers. An action-research study of the incidence of exceptionality among school children in New Mexico, a teacher rating scale for screening secondary school exceptional children in Arizona, and a directory of services available to handicapped children in New Mexico are appended.

1420 The educable mentally retarded student in the secondary school: what research says to the teacher. Washington, D.C.: National Education Association, 1975. 35 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76, plus postage. Order No. ED107047.

The status of the EMR student in secondary schools is reviewed in terms of the classification of EMR pupils, social attitudes, learning processes, and educational needs. Current and historical definitions of MR are reviewed, present and historical attitudes toward MR are discussed in conjunction with legislation defining the rights to education of mildly MR individuals. The developmental and difference theories on the learning processes of EMRs are outlined, and it is recommended that teacher training be revised. Curriculum design, teaching methods, educational diagnosis, and roles of teachers, administrators, employers, the community, and parents are considered in a discussion of meeting the needs of EMR students. EMR students' comments on their own conditions are included.

1421 Appalachian State University. A Competency Based Special Education Undergraduate Internship at Western Carolina Center for the Mentally Retarded. Caldwell, Erin Kent; & Brooks, Benjamin L. Boone, North Carolina, 1975. 190 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$9.51, plus postage. Order No. ED107046.

Undergraduate special education students at Appalachian State University are offered a competency-based internship program at Western Carolina Center for the Mentally Retarded. Applied training programs like this one have a consumer based approach and strive to provide practical and reality based applications of knowledge learned in the classroom. The internship program at the Western Carolina Center is divided into 4 phases: orientation; a preparatory course in behavior modification theory and practice and multidisciplinary seminars conducted by Center staff in their areas of specialization; academic and practicum learning packages; and

program evaluation. A map of the Center, an evaluation of the application of behavioral principles, and lists of practicum competencies on classroom management, the use of music in the classroom, and the medical aspects of disabilities are appended.

1422 BAXTER, JAN. Development and implementation of secondary special education programs. Lansing, Michigan: State Department of Education, 1975. 35 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED107042.

Criteria for the development and implementation of a Michigan secondary school special education diploma program were established. Integration of handicapped students into regular programs is encouraged. However, special educational goals and performance objectives may be established by an Educational Planning and Placement Committee on the basis of individual assessment of needs. Minimal performance objectives for personal adjustment and prevocational and vocational instruction are suggested for exceptional students who cannot complete a regular course of study. Vocational rehabilitation services are provided, and secondary level programs for the handicapped are developed using an educational accountability model. Suggestions for involving parents, students, teachers, administrators, and community members in the selection of appropriate objectives for secondary school special education programs are appended.

1423 PARSLEY, MARILYN. Education of handicapped children; status report: school year 1973-74 and midyear 1974-75. Denver, Colorado: State Department of Education, 1975. 55 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No. ED107026.

The status of Colorado state services for the education of handicapped children in school year 1973-74 and midyear 1974-75 was evaluated. Data on children served, not served, and types of service provided are given for school year 1973-74. Special educational teachers and support staff are

discussed, inservice programs for regular teachers are described, and costs and revenues of special education programs are outlined according to types of programs. The percentages of students in each program who were released because objectives had been reached are recorded, and follow-up data on graduates are provided. Preschool programs, administrative unit plans, and supplemental requests are covered in the midyear report. Average staff salaries, student-teacher ratios, and costs of different types of instruction are appended.

1424 MAYER, WILLIAM V. Planning Curriculum Development: with Examples from Projects for the Mentally Retarded.
Boulder, Colorado: Biological Sciences Curriculum Study, 1975. 102 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210.
Price MF \$0.76; HC \$5.70, plus postage. Order No. ED107020.

Guidelines for planning and development of curricula for the MR are provided, based on data derived from 5 federally funded projects. Identification of the target population, their needs, and program objectives is outlined, and examples are given of curriculum design, including the rationale and conceptual framework. Field test arrangements, product planning (scheduling and feasibility review), and staff selection are covered, and steps for educating staff, field test site personnel, and university staff are outlined. The scope, design, data treatment, and dissemination and implementation procedures (predictability in teacher acceptance, copyrights, and royalties) are discussed. Fiscal status and sources of project funds are among the financial matters considered, and policy procedures and personnel roles are considered along with project management issues.

1425 KENNY, ELEANOR. The quality of special education teacher training programs: a report to the legislature in response to Senate Resolution 1974-178. Olympia, Washington: State Council on Higher Education, 1975. 52 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No. ED107014.

Washington state school districts providing special education services and 10 colleges with relevant teacher training at the Associate, Baccalaureate, Master's, and Doctoral levels were surveyed to make an assessment of the quality of special education teacher training programs in the state. Responses indicate that school districts felt that more of the personnel selection process should be done at the preservice level, and that special education teachers should have strong backgrounds in basic skills. School districts also indicated that they felt that college faculty members know little of the individual districts' programs and problems. It was recommended that a greater variety of practical experience be required of special education graduates and that criteria for assessing student competence be developed by training institutions. Regular communications between teacher training institutions and school districts and relevant training for regular teachers involved in mainstreaming are also needed. A need for a definition of the role of the trained paraprofessional was also identified.

1426 U.S. Congress. Senate. Labor and Public Welfare, Committee on. Education of the Handicapped Act Amendments of 1975: Calendar No. 163, 94th Congress, 1st Session, Senate. Report No. 94-169. Washington, D.C., 1975. 8 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112562.

Senate Bill S.1256, as reported by the Senate Committee on Labor and Public Welfare, contains amendments to the Education of the Handicapped Act which would extend the entitlement formula for payments to the states through June 30, 1977. The entitlement formula is provided under Part B of the Act as amended by Public Law 93-380. The amendments would allow the states to provide 3-21-year-old handicapped children with equal educational opportunity. The early identification and assessment of handicapping conditions in children under 3 years of age would also be provided, according to the amendments, The need for the legislation is outlined, hearings are described, and individual sections of the bill are discussed. Changes with regard to state entitlements, grants to states, and allocations of appropriations in existing law are also considered. 1427 U.S. Congress. Senate. Labor and Public Welfare, Committee on. Education for All Handicapped Children Act: Calendar No. 162, 94th Congress, 1st Session, Senate. Report No. 94-168. Washington, D.C., 1975. 82 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$4.43, plus postage. Order No. ED112561.

Senate Bill S.6, as reported by the Senate Committee on Labor and Public Welfare, would give financial assistance to the states in order to provide better educational services for all handicapped children under the Education of the Handicapped Act. Entitlement under the Act would be extended through 1979, and affirmative action would be required in the employment of qualified handicapped persons. The bill also provides for the establishment of eligibility and application provisions, strengthening of the evaluative and administrative responsibilities of the Commissioner of Education, and removal of architectural barriers to handicapped individuals. Five senators recorded their disagreement with the bill, because it does not require that preschool handicapped children be provided with special educational services such as early identification and evaluations.

1428 WEEKLER, ELAINE; & YOUNGBERG, MILLIE. IMPACT: mainstreaming learning problems in the classroom. Part 1: in classroom. Berrien Springs, Michigan: Berrien Springs Public Schools, 1975. 23 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112559.

Project IMPACT (Instructional Model Program for All Children and Teachers) was developed to be used by regular classroom teachers of kindergartern through 12th grade students with learning disabilities or emotional disturbances and also by teacher trainees. Specially trained IMPACT personnel led inservice teacher training workshops which covered the use of the IMPACT box (instruments for the evaluation of student's academic, learning and behavior skills, to be administered by the teacher) and diagnostic/prescriptive methods. They also provided followup consultation and observed demonstration classrooms, The project's

effectiveness was demonstrated by improvements in students's self-esteem and in their attitudes towards learning. Information is provided on the costs of operating Project IMPACT.

1429 BRICKER, DIANE D.; & BRICKER, WILLIAM A. Non-categorical education for the preschool child. Resources in Education (ERIC), 11(5):93, 1976. 30 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76, plus postage. Order No. ED112558.

Non-categorical education was provided to both normal and developmentally delayed infants and preschool children. Developmental programming, parent involvement and education, integration of delayed and nondelayed toddlers and preschoolers matched on the basis of developmental level rather than chronological age, and early intervention were important aspects of program design and operation. The educational curriculum included exercises in sensorimotor, motor, social, and language development for all age levels. Educational experiences of both parents and infants are outlined, and daily toddler and preschool class-room exercises are described. A rationale is offered for the use of developmental programming.

1430 California State University. Careers in Integrated Early Childhood Programs.
Gorelick, Molly C.; et al. Northridge,
California: Preschool Laboratory, 1975.
272 pp. Available from ERIC Document
Reproduction Service, Box 190, Arlington,
Virginia 22210. Price MF \$0.76; \$13.32,
plus postage. Order No. ED112628.

A competency-based training model for teachers and administrators on the subject of integrating handicapped and normal children in early childhood programs was designed and implemented. The project's rationale, objectives, and training setting are described. The model contains a process for the selection of trainees, an explanation of the development of a teacher assessment profile, a didactic module (courses in child development, independent study, and guest lectures on teaching handicapped children), and a practicum module (direct classroom experience, curriculum design, and child assessment tech-

niques). Trainees were surveyed to determine the effect of exposure to the program on their acceptance of handicapped children. The dissemination of project materials and project evaluation are also covered, and charts, tables, bibliographic information, and 9 appendices are included.

1431 GROMME, ROY O. Me and My Environment formative evaluation report four: assessing student abilities and performance. Boulder, Colorado: Biological Sciences Curriculum Study, 1975. 36 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112623.

A 3-year environmental sciences program for 13-16-year-old EMR students, entitled "Me and My Environment" was field tested. Instructional effectiveness was monitored, and items designed to assess the effectiveness of each of 3 instructional units ("Exploring My Environment", "Me as a Habitat", and "Energy Relationships in My Environment") were evaluated. Fourteen EMR students were taught the techniques of observing, describing, comparing, and ordering objects in a small-scale field test, using stereograms and viewers. A population of 235 EMR adolescents was surveyed concerning attitudes toward and use of tobacco, alcohol, and unprescribed drugs, and implications of findings for curriculum development are discussed. Studies of the functional abilities of EMRs are reported, and the cognitive abilities and manipulative skills of EMRs are related to principles of curriculum development.

1432 CURRIE, WINIFRED. Proposing a model assessment and intervention program for learning disabled adolescents in a typical school population. *Resources in Education (ERIC)*, 11(5):101, 1976. 25 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112622.

A model assessment and intervention program for learning disabled adolescents was proposed after screening over 1,000 eighth and ninth grade students in a typical school population for learning disabilities. Students were administered the Currie-Milonas Screening Test, which contains 8

subtests designed to point out deficits in reading, writing, language, or mathematics skills. It was found that 19.8 percent of the eighth graders, 18.1 percent of the ninth graders, and 28 percent of the ninth graders enrolled in vocational education programs had reading levels of fourth grade or below. The suggested remedial program would utilize available local resources, including classroom teachers, reading teachers, remedial reading specialists, remedial math specialists, learning disabilities specialists, supplemental clinical tutorial services, or referral to special day or residential schools.

1433 Georgia University. Overview of the Georgia Reading Research Program: special reading instructional procedures for mentally retarded and learning disabled children. Allen, Jerry C. Athens, Georgia, 1975. 15 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112618.

Special reading instructional procedures were developed for MR and learning disabled (LD) children, based on the particular verbal learning and language handicaps of the target group. Prototypes of teaching techniques were devised by cross-connecting the children's learning, language, and reading skills, using the following steps: 1) specification of a behaviorally stated instructional objective for the reading skill; 2) identification of the aspect of learning or language involved in the instructional objective; 3) identification of the independent variables affecting that aspect of learning or language; and 4) expression of variants of the independent variables as teaching techniques. Teaching procedures were developed which would help MR and LD children recognize word meanings from context, learn synonyms, homonyms, concepts, sight vocabulary, compounds, and affixes, and recall and comprehend sentences.

1434 METZ, A. STAFFORD; et al. Study of excess costs of educating handicapped pupils. Washington, D.C.: National Center for Educational Statistics, 1975. 53 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No. ED112616.

Eight state education agencies were questioned about excessive costs in special education. Responses indicate that none of the states surveyed has all of the data needed for a detailed assessment of this kind, and that few states used a comprehensive accounting system for programs educating handicapped children, Cost information concerning institutionalized children at other state agencies was also not provided by most state education agencies, and their estimates of the prevalence of certain conditions did not agree. Survey figures are provided for major types of handicaps in each state. Findings indicate that a uniform data system is needed for the assessment of excess costs in special education. A copy of the questionnaire submitted to the state agencies is included.

1435 HENRY, JOAN. Specialized Vocational Training Program Development. Final Report. Bristol, Pennsylvania: Bristol Township School District, 1975. 369 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$18.40, plus postage. Order No. ED112614.

The Bristol Township School District in Pennsylvania provides a training program for the EMRs which provides instruction in preschool education, child care, shipping and receiving maintenance, and food services. Students are supervised within the school in vocational training situations by school service personnel. Regular teachers also use the training program manual for explaining the roles of service workers. The manual contains color-coded units with daily lesson plans explaining general concepts and behavioral objectives, readings, learning activities, and student activities. Student activity sheets are included which may be copied for use in the classroom. The different units have instructions on such varied subjects as body parts and playground safety, growth and development in early childhood, safety in lifting and stacking, use of a time card, outdoor home maintenance, and use of kitchen equipment.

1436 Jacksonville State University. A project designed to increase exceptional child services to northeast Alabama. Frith, Greg. Jacksonville, Alabama, 1975. 7 pp. Available from ERIC Document Reproduction

Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED115071.

An outreach project designed to increase services to exceptional children in 14 rural school systems in the Appalachian area of northeast Alabama is described. Inservice training sessions were conducted at 8 Local Education Agencies in order to bring graduate level special education teachers to rural areas. A conference was conducted on management of emotionally disturbed children in the classroom, and a leadership training institute, a psychometric workshop, a summer conference on identification of critical issues for special educators, a teacher exchange program, and a diagnostic assessment workshop were also provided.

1437 WILDS, THOMAS; et al. Audiovisual Resources for Instructional Development.
Reston, Virginia: Council for Exceptional Children, 1975. 214 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091. Price \$12.00, Order No. 109.

An annotated bibliography of audiovisual resources on techniques, models, or other specific information on providing comprehensive services to the handicapped is presented. Annotations include a brief description, name of distributor, technical information, and cost. There are 8 sections listing alphabetically the different types of materials: audio, film loops, films, filmstrips, multimedia, slide shows, transparencies, or videotapes. Materials are indexed by subject under the following headings: community models, facilities, and resources; curriculum areas; developmental levels; exceptionalities; materials; methods; and program development. Distributors and their addresses are also listed alphabetically, and addresses of sources from which the bulk of the materials are compiled are presented.

1438 City University of New York. Fostering Positive Attitudes Toward the Handicapped in School Settings. New York, New York, 1975. 195 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$9.51, plus postage. Order No. ED115068.

At the Special Study Institute conference on Fostering Positive Attitudes Toward the Handicapped in School Settings, held in Rensselaerville, New York, on May 1-3, 1975, the following subjects were discussed: rationale for the conference, a review of theory and research on reactions to the handicapped, the influence of television on attitudes towards the handicapped, the impact of labeling on receptivity toward handicapped children, the support of teachers for change, recommended learning experiences for children, a curriculum to develop positive attitudes towards the handicapped, and children's literature on the handicapped. Summaries of area planning groups' reports are presented, along with an evaluation of the Special Study Institute, addresses of participants, a 117-item bibliography of professional references and children's literature, and 34 bibliographic entries on multimedia materials.

1439 100 Successful vocational special needs programs. Resources in Education (ERIC), 11(6):29, 1976. 134 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$7.35, plus postage. Order No. ED117442.

A survey was conducted of 100 successful vocational special needs programs to provide a sampling of programs throughout the country and to provide educators and other interested parties with examples of vocational programs that meet the needs of disadvantaged students in school and the educationally disadvantaged not in school, The crippled deaf, emotionally disturbed, EMR, hard of hearing, learning disabled, multiple handicapped, MR, other health impaired, speech impaired, TMR, and visually handicapped were among the handicaps identified. Information is available for each program, including cost, nature of the disadvantage, administrative personnel, location of the school, program title, and brief descriptions of program activities and outcomes. Information regarding characteristics of the schools is also provided, such as the number of students, grade level, type of handicap, and whether the school is urban or rural and for disadvantaged or handicapped individuals.

1440 ALRC [Area Learning Resource Center] workscope elaboration. Second edition. Publication No. NC-75.501. Columbus, Ohio: National Center on Educational Media and Materials for the Handicapped, 1975. 57 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76. Order No. ED111159.

The scope of the ALRC (Area Learning Resource Center) network includes provision of instructional media, materials, and technology services to special education programs. State program development, media, materials, educational technology training, and project administration are emphasized. State program development functions include assisting states in stimulating local or state materials centers and providing technical assistance to State Education Agencies in state planning of intrastate materials and services. Media, materials, and educational technology training services include helping trainers to identify needs, helping trainers to locate extant and usable training programs and materials, and classifying, describing, and encoding materials for information base entry. ALRC also functions in the area of project planning, monitoring, reporting, and other management areas.

1441 Indiana University. A model delivery system for children with learning disabilities. Working paper 47.1. Gilespie, Patricia H.; & Semmel, Melvyn I. Bloomington, Indiana: Center for Innovation in Teaching the Handicapped, 1975. 24 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED111153.

A hierarchical model delivery system for educational services to children with learning disabilities was developed. The model describes three types of interrelated educational centers: university based centralized centers in highly populated areas offering complete services (Type I); satellite centers in communities which focus on the dissemination of new techniques and materials (Type II); and centers serving small rural school systems with minimal resources (Type III). Three Type I centers, 17 Type II centers, and 34 Type III centers are needed in Indiana. Demographic variables which often limit services provided to learning disabled children are taken into account, and activities of each type of center are outlined, such as development of identification/diagnostic screening processes by Type I centers.

1442 George Washington University. Special Education/Early Childhood Program. Washington, D.C.: School of Education, 1975. 10 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED117091.

The Special Education Early Childhood Program of The George Washington University, a 1 year, full time, noncategorical, 36-hour masters program designed to develop clinical proficiency in areas such as alternative models of service, counseling techniques, clincial teaching, identification assessment, handicapping conditions, child development, and multidisciplinary theory, is described. The purpose of the program is to combine theory with practical experience in servicing the handicapped child. The program is field based, with 50 percent of instructional time spent in 2 demonstration centers, one of which serves severely and multiply handicapped children up to age 3, and the other which serves minimally handicapped children ages 3 to 8. Students spend 7 weeks at each site, and are accompanied into the field by a primary staff of 5 who guide them in a variety of experiences from infant stimulation to teacher training.

1443 DREW, HERBERT A., JR.; & LYNCH, EDWARD J. Regional Educational Assessment Diagnostic Services: concept to action (R.E.A.D.S.). Practicum report. Maxi I. Resources in Education (ERIC), 11(7):109, 1976. 163 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83, plus postage. Order No. ED119452.

The Regional Education Assessment Diagnostic Services (READS) Project was developed to provide diagnostic services for exceptional children in 20 Massachusetts school districts, as mandated by state legislation. The legislative basis for the development of READS, the financial support provided by the community, the formation of an administrative structure, and the staffing and organization of the program for the 1974-1975 school year are outlined. A case study is presented to illustrate the sensitivity of READS to the needs of the handicapped child. The legislation requiring

special education for exceptional children, student records requirements, and parental and school professional evaluations of the program are appended.

1444 Oregón College of Education. Oregón Model Center – learning disabilities: final report on products and activities, 1973-1975. Calkin, Abigail B. Monmouth, Oregon, 1975. 72 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$3.50, plus postage. Order No. ED119400.

A final report on the activities of the Oregon Model Center for children with learning disabilities during the period 1973-1975 is presented. The report includes evaluations of: attempts to develop new methods of diagnosing, treating, and prescribing for learning disabled children; minidemonstrations of techniques to be used in conjunction with the rest of a child's treatment program; and a program useful for training administrators of diagnostic-prescriptive centers. The report also describes the contents of a manual on diagnosis and prescription, materials produced by the Center for use by parents and teachers, ideas generated by advisory councils on changes in the diagnostic and prescriptive processes, results of a followup survey of teachers and parents, and evaluations of the 3 pilot centers already operating under the program.

1445 GERSHMAN, JANIS. The evaluation of special education programs: past attempts and present directions. No. 134. Toronto, Ontario: Toronto Board of Education, 1975. 31 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED119415.

Past attempts and present directions in the evaluation of Canadian special education programs are reviewed, focusing on the issue of regular versus special class placement. The effects of mainstreaming on the social acceptance of handicapped children by peers, self-concept of handicapped students, and their attitudes toward school were examined. A comparison was made of 4 models for delivery of services to handicapped children, and the influence of socioeconomic

factors on school achievement and adjustment was investigated. More process oriented as opposed to outcome oriented evaluation approaches, a decrease in the labeling of children using medical and psycholgoial terms, attempts to match students to teaching systems, and increased efforts toward early identification and intervention as a means of preventing later disability are emerging trends in Canadian special education.

1446 School of Education. Remedial teaching: a forward looking theory. Didakometry. No. 49. Magne, Olof. Malmo, Sweden: Department of Educational and Psychological Research, 1975. 24 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119416.

Many of the studies done in Sweden on the effectiveness of special education are questionable and have encouraged an unfounded attitude of disillusionment with special education programs. Theoretical discussion is necessary to develop more effective teaching strategies, based on the identification of optimal learning conditions for handicapped children, and constructive research must be designed. A comparison of the simple integration theory of treatment, by which handicapped students are taught in regular classes, and the intensity theory, by which handicapped students are taught individually in special education programs, indicates that the intensity theory is preferable.

1447 WATSON, B. The remedial role of pre-school education: mentally retarded children. Strasbourg, France: Council of Europe, 1975. 37 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED119422.

Preschool services for MR children in the Sheffield Metropolitan District of South Yorkshire, England, were studied to assess the effects of early childhood education. The incidence and etiology of MR among this group are examined, and procedures used in the district for early detection and multidisciplinary assessment are evaluated. Educational programs based on individual assess-

ments are described, and teacher preparation and inservice training programs are discussed. Further study is needed to provide a comparison of the effectiveness of preschool programs in different settings and of enrolling MR children in regular preschools.

1448 TRUBY, ROY. Due process procedures for Idaho's exceptional students: guidelines. Boise, Idaho: State Department of Education, 1975. 20 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119437.

Guidelines were developed which explain to parents of exceptional children how Idaho due process requirements provide procedural protection in decisions concerning identification, evaluation, and educational placement of exceptional children. Due process requirements for parental initiation of special education services, for school initiation of special education programs, for parental consent to testing and placement, and for informal hearings are considered, along with the confidential management in Idaho of the school records of exceptional children.

1449 Rules governing programs and services for children with special needs. Raleigh, North Carolina: Public Instruction Department, 1976. 51 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$3.50, plus postage. Order No. ED119440.

North Carolina regulations concerning programs and services for handicapped and gifted children are described. Responsibilities and organization of the Division for Exceptional Children and the organization and administration of local programs are covered, along with allotments for special education and funds for facilities and transportation. Processes for referral, screening, assessment, and placement of exceptional children are discussed, and education expense grants for this population are considered. Local equal educational opportunities, plans and programs for exceptional children and alternative programming are outlined. The organization and administrative structure of the Governor's School of North Carolina, review

of placement decisions, and the process of appeal of local school board decisions to the State Superintendent of Public Instruction are also discussed.

1450 A study of exceptional children in Idaho: special education needs assessment study. Resources in Education (ERIC), 11(7):107, 1976. 192 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$10.03, plus postage. Order No. ED119436.

A needs assessment was conducted of Idaho special education programs, which evaluated the needs of 22,020 handicapped children of school age. The prevalence of exceptional children in Idaho was determined, and services available, including Child Find, which are necessary to meet state legislated mandates, were analyzed. Adequacy of manpower and potential training resources were assessed, along with consumer satisfaction with present services or new alternatives. Current and proposed funding patterns for special services and educational programs and legislative considerations for the implementation of training, programming, and financing were considered. The format used may be replicated by other states. Emphasis was on cause and effect relationships throughout the state which may affect planning for exceptional children.

1451 FLAHIVE, MICHAEL J.; et al. Language Development-Perceptual Motor Training Program. Resources in Education (ERIC), 11(7):107, 1976. 177 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83, plus postage. Order No. ED119441.

The Language Development-Perceptual Motor Training Program was developed to provide a step-by-step curriculum aimed at increasing the level of functioning of SMR children. The curriculum outlines strategies for dealing with SMR children on the level of their communicative abilities. Program areas are color coded, and include such topics as verbal imitation, conceptual receptive vocabulary, receptive vocabulary, motor imitation, and reinforcement. Each program area is comprised of a set of developmental steps, and suggestions are given for tasks to be completed,

procedures, reinforcers, materials, and setting for each step, sensorimotor training materials are also listed. The program may be implemented by teachers and parents of SMR children outside the institutional setting.

1452 New Jersey. Education Department. Educational Programs that Work, Volume 2: a Catalogue of Demonstration Sites of Successful Educational Programs from across the U.S., Disseminated through a National Communications Network Sponsored by the U.S. Office of Education. (Research, Planning, and Evaluation Division). Trenton, New Jersey, 1975, 153 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$8.24, plus postage. Order No. ED116395.

Overviews are provided of approximately 60 regular and special education programs developed in states other than New Jersey. Aspects of the programs which are described include contact procedures, program evaluation, adoption criteria and services, target audience, materials, and financial requirements. Specific programs are noted, and information concerning the focus of each program is provided: Remediation for Children with Learning Deficits through Precision Teaching, a special education program: Engineered Classrooms for Students who are Educable Mentally Handicapped and Behaviorally Maladjusted, an individualized instruction program; Urban Arts Program, a special curriculum; Project SHARE: Sharing High Yield Accountability with Resource Educators, an educational management program; Home Start Family Centered Preschool Enrichment, an early childhood/preschool program; Vocational Reading Power, a career/vocational education program; Conceptually Oriented Mathematics Program, a basic skills study. The programs were found to be successful, cost effective, and replicable.

1453 California. Education Department. Programs for the educable mentally retarded in California public schools. Hanson, Fred M.; & Shryock, Clifton. (Bureau for Mentally Exceptional Children). Sacramento, California, 1974, 96 pp. Available from ERIC Document Reproduction Ser-

vice, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$4.43, plus postage. Order No. ED116405.

Program components for EMR students in California public schools are presented in a booklet prepared by the California State Department of Education. Identification and assessment of EMR students are cited as legal requirements in the state of California. The characteristics and learning styles of the EMR are considered, and the effect of these factors on planning a school curriculum is noted. Legal provisions for reassessment are also noted. Administrative and teaching models are provided, which include program goals and objectives and behavioral objectives for the students. Suggestions for evaluating a program for EMR students include product evaluation and curriculum validation.

1454 EDWARDS, JAMES C.; & TEMPLETON, VIRGINIA. Adaptive education and program components for the trainable mentally retarded in California public schools. Resources in Education (ERIC), 11(5):104, 1976. 81 pp. Available from California State Education Department, 721 Capitol Mall, Sacramento, California 95802. Price \$0.50.

Guidelines are offered for serving TMR students in California public schools. The general characteristics of TMR pupils are noted, and criteria for instructional grouping are suggested. Information is provided on various aspects of physical facilities, such as location and building characteristics. The effect of public attitudes, legislation, and legal provisions concerning identification, assessment, financing, and placement of TMR students are examined. It is recommended that the training goals of a public school program for TMR students include classes in self-help and communication skills, and assistance in achieving personal and social competency. Program evaluation components are also needed, and should include assessments of products and the delivery system.

1455 Wisconsin. Public Instruction Department.
Basic life functions instructional program model; curriculum guide for children with exceptional educational needs. (Handicapped Children Division). Madison, Wisconsin, 1975. 732 pp. Available from

ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$1.23; HC \$37.45, plus postage. Order No. ED116415.

A guide for instructing moderately MR and SMR students in basic life skills is discussed. The guide is intended to provide functional assessment and record keeping measures for individual programming. The basic life needs which are considered include self-comprehension, expressing ideas, interpersonal interaction, safety measures, travel and mobility, adaptation to physical surroundings, and maintaining one's health. Development is also encouraged in homemaking skills, assistance in financial maintenance, utilization of recreational facilities, and creativity through art and music. Developmental levels are noted for each skill, and information is provided on the materials and equipment needed for instructing these MR students in basic life skills.

Division for Handicapped Children 126 Langdon Street Madison, Wisconsin 53702

1456 Providing services for pre-vocational mentally retarded adults: final report. 15 June 1970- 15 January 1974. Fort Wayne, Indiana: Allen County Association for the Retarded, 1974. 16 pp. Available from National Technical Information Service, Springfield, Virginia 22161. Price MF \$2.25; HC \$3.25. Order No. PB-243-259.

The Behavior Recycling Program, a program initiated to assist socially maladjusted MR youth to return to public school classes, is discussed. A final report on the outcome of the program indicates that 70 percent of all socially maladjusted MR adolescents can be placed in public school classes within 12 months of departure by using an out-of-school team teaching approach. Behavior change data were obtained on the students in this program through a series of questionnaires administered to parents, teachers, probation officers, and students. Eight recommendations are included for future programs.

1457 Virginia. Education Department. Guide for curriculum development for teachers of trainable mentally retarded children. Richmond, Virginia, 1973. 90 pp. Available from Merrimack Education Center, 101 Mill Road, Chelmsford, Massachusetts. Price \$1.25.

A guide for curriculum development for teachers of TMR children, which was designed by the Virginia State Education Department, is discussed. Activities are suggested for children in the primary, intermediate, and advanced levels of intellectual, physical, emotional, and social development. The role of the teacher in dealing with the TMR child is considered, as well as curriculum design factors. The long-range goals and characteristics of the TMR child are also noted. Information is offered on curriculum evaluation, scheduling, and lesson plans for arts and crafts activities to be executed in the home on an individual basis.

1458 Project S.T.E.P.: seniors tutor for educational progress. Annual evaluation report, July 1974 - June 1975. Easton-Redding, Connecticut: Easton-Redding Regional School District 9, 1975. 30 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED120295.

In order to enhance academic achievement and psychosocial growth in learning deficient or psychosocial deficient seventh and eight graders in Connecticut, Project STEP (seniors tutor for educational progress) was instituted. In this program, each student was teamed with a senior citizen aide who served as tutor. Each such team created educational devices which the student then used to tutor elementary school students. Evaluation based on pre-post experimental design revealed that student participants were able to match or exceed academic growth rates of their normal peers. Components evaluated in the experiment were academic achievement, intellectual ability, written expression, school grades, internal-external locus of control, self-concept, classroom and home behavior, self-rating of behavior, and adjustment. In general, student participants progressed from a functional range of low average intelligence to the average intelligence range, and they also demonstrated increased internal orientation and other favorable attitudinal and behavioral changes.

1459 Minnesota University. Observation of Pupils and Teachers in Mainstream and Special Education Settings: Alternative Strategies. Weinberg, Richard A.; & Wood, Frank H. Minneapolis, Minnesota: Dept. of Special Education, 1975. 281 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091, Price \$2.50.

Four systematized methods of classroom observation are discussed, with emphasis on the importance of formal, systematic observation as a tool for viewing and recording pupil behaviors and ensuring that each child's needs are met in both mainstream and special education environments. The 4 methods of observation include an interaction analysis approach, a behaviorist approach, an ecological approach, and the ethological perspective in education. The interactional analysis approach is examined in terms of its use in studying pupil attitudes toward learning, alternative uses in such fields as teacher training and evaluation, and the characteristics necessary for using observation as a measuring instrument. The ecological approach includes an investigation of children with physical disabilities and emphasizes the importance of completeness of data. Data recording approaches pertinent to the behavioral approach are described, and problems are analyzed. The use of systematic classroom observation in studying mainstream and special education settings is reviewed, and the effects of observation on pupil-teacher interaction are considered.

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1460 PICA, TERESA. Project S.T.E.P.: seniors tutor for educational progress. Easton-Redding, Connecticut: Easton-Redding Regional School District 9, 1975. 29 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED120296.

Project STEP (seniors tutor for educational progress) is designed to increase the academic achievement and psychosocial growth of seventh and eighth graders with deficits in academic performance or psychosocial development by pairing the students with senior citizen aides who serve as tutors. Each pair then creates educational devices which the student uses to tutor elementary school students. Information on the senior

citizens, recruiting senior aides, training, selection of students, pairing students and senior aides, and program implementation and facilities are discussed. Evaluation criteria include performance in reading, math, and handwriting and development of self-concept, classroom and home behavior, and personal adjustment. Methods for stimulating student creativity and educational devices produced by the student - senior aide pairs are described.

1461 GOTTLIEB, JAY; & CORMAN, LOUISE. Public attitudes toward mentally retarded children. American Journal of Mental Deficiency, 80(1):72-80, 1975.

An exploratory survey of 430 adults examined public attitudes toward MR children in view of the trends toward mainstreaming handicapped children in the community and in schools. Questionnaire responses to 48 attitudinal statements yielded 5 factors underlying attitudes toward MR children: positive stereotype, segregation in the community, segregation in the classroom, and perceived physical and intellectual handicap. Respondents who favored or opposed community segregation did not necessarily hold a similar view toward school segregation. A majority of the sample favored community integration, with segregation more often favored by older persons, parents of school-aged children, and people with no previous contact with MRs. While most respondents believed that including MRs in regular classes would not harm non-MR children, fewer believed that school integration would benefit MRs. (9 refs.)

Research Institute for Educational Problems 12 Maple Avenue Cambridge, Massachusetts 02139

1462 ROSS, MICHAEL B.; & *SALVIA, JOHN. Attractiveness as a biasing factor in teacher judgments. American Journal of Mental Deficiency, 80(1):96-98, 1975.

Seventy-six elementary school teachers were Ss in a double-blind experimental procedure which assessed the effects of facial attractiveness and sex on teaching recommendations for special class-placement and teacher judgments of future school-related behavior. When given identical information, teachers systematically rated attrac-

tive children more favorably than unattractive children. Teachers were more willing to recommend special-class placement for unattractive children and reported lower expectations for future academic and social development of unattractive students described in fictitious case reports. A large degree of subjective judgment in educational decisions may put unattractive children at a distinct disadvantage. (15 refs.)

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1463 WAGNER, PATRICIA; & STERNLICHT MANNY. Retarded persons as "teachers": retarded adolescents tutoring retarded children. American Journal of Mental Deficiency, 79(6):674-679, 1975.

A tutorial program which used adolescent MRs in a residential school to train younger MR children had benefits for both the adolescent trainers and the children. Tutors who received 30 hours of training in dressing techniques and 30 hours of training in eating techniques were able to teach dressing and eating skills to the trainees in 18.5 and 20 hours, respectively. Improvements in dressing and eating among experimental trainees were significant. Secondary gains included an increased ability for the trainees to imitate their tutors, a generalized tendency to attend to people and events in their environment, and some decrease in inappropriate behavior. Tutors also showed significant increases in proficiency in their eating skills. Tutors did not show significant gains in social and personal adjustment on the Adaptive Behavior scales, but maladaptive behavior among them decreased significantly. The tutorial model affords the opportunity for SMRs to gain some measure of personal independence which may make their retention in community programs more feasible. (17 refs.)

Bronx Developmental Center 1000 Waters Place Bronx, New York 10461 1464 STEPHENS, WYATT E.; HOLDER, LORETA O.; & LUDY, ISA E. Action-concept usage by nonretarded and retarded children on structured tasks with praise for performance. American Journal of Mental Deficiency, 79(6):659-665, 1975.

The equivalence-formation responses of 3 groups of children with MAs of 8 years were compared under the structured task and praise conditions to determine whether these conditions could raise the performance of mildly and moderately MR children to the same level as that of non-MR children of the same MA. Pictorial items described by Stephens, Nopar, and Gillam (1971) were used as stimulus materials. Even with enhancing effects of task structure and praise for performance, both groups of MR children made fewer total responses than non-MR children. However, mildly MR children performed like the non-MR children on number of errors, number of action concepts, and number of different action concepts used. Moderately MR children did not perform up to MA expectations in either absolute numbers of responses or in relative comparisons. The failure of the moderately MR children to show MA-appropriate levels of use of action concepts even with structure and praise may be due to etiological factors. Motivational factors may explain why mildly MR children do not perform quantitatively at MA expectations. (10 refs.)

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1465 HARING, NORRIS G.; & KRUG, DAVID A. Evaluation of a program of systematic instructional procedures for extremely poor retarded children. American Journal of Mental Deficiency, 79(6):627-631, 1975.

When 24 innercity children classified as EMR were placed into self-contained classrooms and taught by precision-teaching methods, 60 percent acquired the basic skills necessary for regular class placement in 8 months. None of the control children, matched for age, intelligence quotient, family income, race, and achievement scores, were able to meet the criteria for regular class placement after being taught by methods peculiar to their own teachers. The experimental program provided a learning environment which maximized

pupil responding. Critical aspects of the environment were: 1) systematic arrangement of instructional cues; 2) use of programmed learning technology; 3) careful management of reinforcement contingencies; and 4) accurate, continuous measurement of performance in an attempt to evaluate the total instructional process. A self-contained classroom with a low pupil-teacher ratio (12:1) provides the environment for implementing these program facets. (6 refs.)

Experimental Education Unit Child Development and Mental Retardation Center, WJ-10 University of Washington Seattle, Washington 98195

1466 City University of New York. Paraprofessionals in special education: update report. Fafard, Mary-Beth. Flushing, New York, 1975. 31 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112591.

Innovations in the training and utilization of paraprofessionals as special educators are outlined, and trends to be expected in the future are predicted. A review of the literature from 1973 to 1975 identified a movement toward increased use of paraprofessionals in the field of special education. Directors of 12 community colleges which offer programs for training of these paraprofessionals responded to questionnaire inquiries concerning types of programs, number of paraprofessionals being trained, graduated, and employed, and program highlights and innovations. Conclusions reached at conventions and workshops indicate that paraprofessionals have been successful in their work with handicapped children. Still needed are the organized dissemination of materials and management and training skills to facilitate the cooperation of professionals and paraprofessionals, and also improved training models to instruct paraprofessionals in dealing with severely handicapped children.

1467 WILL, PATRICIA. Home and Family Living Laboratory Curriculum Guide. 1975 Developmental Edition. St. Paul, Minnesota: Saint Paul Public Schools, Home and Family Living Lab, 1975. 357 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$18.40, plus postage. Order No. ED112599.

The curriculum guide from the Home and Family Laboratory, a project of the Child Development Center (St. Paul, Minnesota) which serves EMR and TMR teenagers and young adults, is presented. The laboratory setting is a house next to the school building for 12 students, and is designed to help students transfer home maintenance and home economics skills to the real life situation. Seven curriculum units are taught, all of which are accompanied in the curriculum guide by lists of objectives, learning activities, vocabulary, teaching aids/resources, related academic objectives, and evaluative criteria. Leisure time, home emergencies, home maintenance, interior home care and planning, personal needs within the family, money and the consumer, and living in a neighborhood are the subjects covered in the curriculum. The history of the project is summarized, and mainstreaming aspects of the program are outlined. Take-home activities which may be coordinated with the curriculum and media to be used with each of the 7 units are described.

1468 MURRAY, CHARLES. Project Serch: Seeking Educational Resources for Children with Handicaps. State Wide Report. Final Report. Pitman, New Jersey: Educational Improvement Center, 1975. 500 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.92; HC \$24.75, plus postage. Order No. ED108451.

A Title VI project in New Jersey, which provided sequential educational programs for blind, deaf blind, severely emotionally disturbed, and multiply handicapped children from nursery school through grade 12, is discussed. The 6 regional committees that planned the statewide day school facilities were responsible for identifying the children to be served by the program, determining their educational needs, and offering suggestions for site specifications and physical planning. A coordinating council consolidated the information gathered by the 6 regional units and presented the data to the State Board of Education. The results of a parent-educator survey concerning educational goals and consultant reports on the needs of deaf, emotionally or socially disturbed, or multiply handicapped children are also included.

1469 KIEFER, CHARLES C.; & VOELKNER, ALVIN R. The evaluation of vocational education special needs programs. Resources in Education (ERIC), 10(11):207, 1975. 20 pp. Available from ERIC Document Reproduction Service, Box 190 Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58 plus postage. Order No. ED109192.

Data collection instruments were used to evaluate a variety of special needs programs which were funded by the Michigan Department of Education in 1972. The initial data collection was an important base in implementing a more sophisticated evaluation design. The final results and conclusions of the 1972 study are discussed, as well as the methodology and tentative findings of a more comprehensive 1974 study. Plans for future evaluations are also presented, with emphasis on methodological considerations.

1470 TURNER, MARGUERITE T.; & WATKINS CHARLOTTE H. A three-dimensional approach to learning disabilities in the secondary school. *Resources in Education (ERIC)*, 11(5):95, 1976. 32 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112578.

Identification, diagnostic, and intervention services were provided to approximately 400 learning disabled (LD) students during a 2 year program implemented in 8 junior high schools. The program attempted to meet the students' needs for special help, to successfully integrate students in regular classrooms, and to increase parental understanding. The program also focused on increasing students' language achievement and increasing school attendance. A speech and hearing specialist, a perceptual-motor specialist, and learning disabilities teachers staffed the program. Fifteen program strengths and weaknesses were identified. Significant successes were observed in the areas of achievement test performance, students' self-concept, and mainstream performance, and parents strongly approved of the home involvement aspect of the program. The total program cost was \$223,000 (\$320/student) during the first year.

1471 DAY, HARVEY; & PARNES, ROBERT. A computer based simulation as an alternative teacher training strategy. Resources in Education (ERIC), 11(5):95, 1976. 4 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112579.

The possibility of using a computer-based simulation as a teacher training device was explored. The cases of 5 hypothetical handicapped children were used to develop a simulation program for teacher trainees, which allows the trainees to practice making pupil behavioral interventions. Trainees may choose to use a task or information sharing mode of intervention, or one which involves intervention or control, or prevention aimed at keeping the pupil on-task. Using the simulation, classroom management problems can be experienced by the teacher-trainees in a low-risk situation.

1472 BEPKO, RAYMOND A; et al. Curriculum research and evaluation: implications for personnel training. Resources in Education (ERIC), 11(5):95-96, 1976. 18 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED122581.

An observational evaluation was carried out on an experimental course of study for EMRs entitled "Social Learning Curriculum," in order to identify personnel issues. The curriculum is based on the development of a pattern of problem-solving consisting of: 1) the emergence of the problem; 2) differentiation of its elements; and 3) integration of problem elements with new knowledge. It was used with 17 9-14-year-old EMR students, and both teachers and students were rated on a 60-item scale designed to measure the curriculum objectives of critical thinking and independent action. A wide variation was observed in teachers' implementation of the curriculum, which may indicate that teachers should be instructed in the implementation as well as in the content of the new program.

1473 Suggested program assessment checklist. Albany, New York: New York State Education Department, Division for Handicapped Children, 1975. 65 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No. ED112582.

As guidelines for planning, implementation, and improvement of educational programs for handicapped children, program assessment checklists were developed. There are different checklists for the following handicaps: EMR and TMR; learning disabilities; severe hearing impairments and deafness; speech, language, and hearing handicaps and severe speech impairments; visual handicaps; multiple handicaps; severe health problems and physical impairments; and physical handicaps. Strengths and weaknesses are pointed out for specific aspects of such programs, including eligibility, assessment and placement, comprehensive programs and services, housing facilities and equipment, and education programs.

1474 PENISTON, EUGENE. An evaluation of the Portage Project: a comparison of a home-visit program for multiply handicapped preschoolers and Head Start program. Resources in Education (ERIC), 11(5):94, 1976. 14 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112570.

During 36 weekly sessions, the Portage Home Visit (PHV) Parent Involvement Porgram attempted to help 36 multiply handicapped, developmentally delayed preschoolers in rural Wisconsin to improve their IQ's and their motor, language, adaptive, and personal-social developmental skills. Parents were provided with technical assistance, and an educational model, including a prescriptive precision teaching approach which utilized positive reinforcement, and they were instructed in recording their children's performance on prescribed activities by trainers who came to their homes. Subjects demonstrated significantly better IQ, adaptive behavior, language development, and personal-social skills at posttest. However, their motor coordination skills were not improved by the PHV intervention, which may be attributed to the severity of their physical handicaps.

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1475 GODDU, ROLAND; & TUFTS, JEAN.

Guidelines for Accreditation of Private
Schools for the Handicapped: Report on
Project. Durham, New Hampshire: New
England Program in Teacher Education,
1975. 143 pp. Available from ERIC
Document Reproduction Service, Box 190,
Arlington, Virginia 22210. Price MF \$0.76;
HC \$6.97, plus postage. Order No.
ED112566.

Six areas are covered in guidelines intended for accreditation of Massachusetts private schools for the handicapped. Areas discussed include administrative services, operational services, support services, physical facilities, student characteristics, and educational program information. The Application for Accreditation of Private Special Education Programs is presented, and questions are provided to be asked during the school's self-evaluation. Final decision and on-site phases of the assessment are also covered.

1476 STODDEN, ROBERT A.; & LANACONE, ROBERT N. The use of semantic differential to assess the perceptions and attitudes of preservice and advanced degree candidates toward various exceptionalities. Resources in Education (ERIC), 11(6):91, 1976. 14 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED117899

Three groups of bachelor level special education majors and doctoral candidates in education were studied to measure their perceptions toward the MR and various other exceptionalities after exposure to 3 types of treatment. The treatment modalities included: no treatment in the control group; negative treatment in experimental group I, which consisted of a 10 minute slide-tape presentation of various syndromes associated with PMR; and positive treatment in experimental group II, which consisted of a 10 minute presentation of selections recorded by a musically superior group of EMR students. Findings from pre- and posttests on semantic differential scales indicated that the attitudes and perceptions of the advanced degree Ss were significantly more positive than those of the preservice special education Ss, and that the label gifted was viewed most positively of all labels, while SMR was viewed most negatively.

1477 MILLER-JACOBS, SANDRA. Mainstreaming special needs children into open settings. Resources in Education (ERIC), 11(6):91, 1976. 45 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED117898.

Principles of open education and special education are compared and 6 programs in which handicapped children are being successfully mainstreamed into open education situations are described. The philosophies of open education and special education are delineated, and 29 theories about children's learning and knowledge are listed. Themes such as instruction, provisioning, diagnosis, evaluation, humaneness, seeking, assumptions, self-perception, the teacher-student relationship, and physical space are discussed. Evaluation results for one program are provided in terms of the children, the teachers, and the techniques.

1478 Ohio State University. Infant Stimulation Curriculum. Revised Edition. Columbus, Ohio: Herschel W. Nisonger Center, 1975. 210 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$11.37, plus postage. Order No. ED117896.

The Infant Stimulation Curriculum was designed by the Developmentally Delayed Infant Outreach Project for parents and teachers to use with children who are developmentally between birth and 36 months of age. The curriculum is presented at a sixth grade readability level and includes introductory cards providing information on the purpose of the curriculum, ways to adapt the curriculum to handicapped children, and how to use the curriculum to identify a child's behavioral level and stimulate development through 8 stages for each of the following areas: locomotion, coordination, cognition, receptive language, expressive language, and socialization. There are 44 to 72 cards available for each area, each of which specifies an observable behavior and suggests 2 or more activities to stimulate the target behavior. A chart is provided to record each child's progress on such behaviors as ability to dry hands after washing or ability to place a small can in a larger 1479 Ohio State University. Infant Stimulation Curriculum: Development and Evaluation Report. Storm, Pat Purdy; et al. Columbus, Ohio, 1975. 100 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$4 67, plus postage. Order No. ED117895.

The Infant Stimulation Curriculum was designed by the Developmentally Delayed Infant Education Outreach Project for infants developmentally between birth and 36 months of age. The curriculum is described in terms of characteristics (such as basis in the normal developmental pattern), rationale, philosophy, and format. Objectives in the curriculum development process are listed, and a flow chart of the development process is provided. Field testing was conducted with 68 children at 5 sites in order to: determine whether the behaviors as expressed are observable; determine whether the behaviors are sequenced approximately; and determine whether the activities listed for each behavior are appropriate for the child's level of ability. The curriculum readability work sheet is included, as well as a questionnaire soliciting curriculum critiquing feedback, a toys and materials list, the curriculum assessment tool instructions, results of the first field testing, the revised assessment tool, and results of followup field testing.

1480 LOTT, LEROY A., JR.; et al. Strategies and Techniques for Mainstreaming: a Resource Room Handbook. Monroe, Michigan; Monroe County Intermediate School District, 1975. 249 pp. Available form ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83, plus postage. Order No. ED117890.

A handbook of strategies and techniques for mainstreaming EMR, emotionally impaired, and learning disabled students into regular classrooms is presented for regular classroom teachers, resource room teachers, and teacher consultants. The topics reviewed include: resource room models, personnel, staff relations, physical layout and equipment, diagnosis (including informal tests of specific subjects and perceptual skills), teacher interview techniques, elementary and secondary consultations, educational contracts (including behavioral contracts and alternative grading

systems), individualizing instruction (prescriptive teaching, selecting appropriate materials and modifying curriculum), inservice alternatives to resource room placement, and program evaluation.

1481 ROULHAC, VICKI SCRIVEN; & BULLOCK, LYNDAL M. Competency based and noncompetency based personnel preparation programs in special education. Resources in Education (ERIC), 11(6):89, 1976. 53 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$3.50, plus postage. Order No. ED117889.

Program components of federally funded competency based (CBTE) programs and federally funded noncompetency based (NCBTE) programs are compared. Department chairpersons of 258 college and university special education teacher training programs answered mailed questionnaires specific for either a CBTE or a NCBTE program. It was found that: 60 percent of the chairpersons administered categorical CBTE or NCBTE programs; the majority of students in both programs were in the bachelor's level programs; the area of MR received more enrollments than any other category; most CBTE programs were initiated as a result of federal funds or legislative mandates; department chairpersons listed similar essential program components for both programs; and printed nonpublished instructional packages exist in the CBTE programs, but not in most NCBTE programs. NCBTE programs consider practicum as the strongest program component, whereas the CBTE programs listed learning packets, individual study, and practicum as the strongest components.

1482 SOMERTON, M. ELLEN; & TURNER KEITH D. Pennsylvania Training Model: Individual Assessment Guide. Reston, Virginia: Council for Exceptional Children, 1975. 78 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091. Price, \$3,25, Publication No. 124.

The Pennsylvania Training Model Individual Assessment Guide, which was designed to assist teachers in the development of specific programs for the SMR, PMR, and multihandicapped, is described. Four major components of the system

are reviewed: the curriculum assessment guide for gross screening in the areas of sensory and motor development, activities of daily living, communication, perceptual-cognitive skills, and social and emotional development; competency checklists of more specific behaviors within each subject area; an individual prescriptive planning sheet, in which antecedents, behavior, consequences, and criteria are task analyzed; and continuous data, recording the child's progress. A flow chart of the system, an annotated bibliography of approximately 50 references and a summary of the first year of the Pennsylvania Training Model are also provided.

1483 HARING, NORRIS G. Special education for the severely handicapped: the state of the art in 1975. Reston, Virginia: Council for Exceptional Children, 1975. 22 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091. Price \$1.95. Publication No. 125.

The skills and competencies needed by teachers working with severely handicapped children are discussed. The importance of practicum experience in developing teaching competencies such as continuous evaluation, preparation of instructional materials, arranging reinforcement contingencies, and providing for parent involvement is noted, and the applications of operant conditioning, systematic program building (task analysis), and instructional procedures to the acquisition of such basic skills as self-feeding and walking are analyzed.

1484 VOSBECK, R. RANDALL. Facilities for people who learn differently. Resources in Education (ERIC), 10(11):87, 1975. 12 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED108347.

The rights of young people to equal treatment, education, and opportunity, regardless of the severity of their learning problems, is discussed. This right has been upheld by the U.S. judicial system, resulting in the entrance of a broad range of exceptional children into the educational mainstream. Emphasis in educating the disabled child no longer concentrates on the types of disability, but on the specific characteristics of the child's learning abilities and constraints. The need

for a bond between the educational and architectural professions is stressed, in order to treat most effectively the needs of exceptional children and of special education. Guidelines for designing or renovating a facility to house a special education program are provided.

1485 Washington University. A selected bibliography (partially annotated) related to the vocational training of severely handicapped persons. Friedle, Mike; & Fox, Lucy. Seattle, Washington: Child Development and Mental Retardation Center, 1974. 16 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED108419.

A bibliography which contains nearly 100 references related to vocational training for severely handicapped persons is presented. The references date from 1927 until 1975, and are arranged alphabetically by author's name. The title, source, data, and pagination information are included and, in some cases, abstracts are also provided.

1486 Washington University. Bibliography: Early childhood education for the handicapped. Edgar, Eugene. Seattle, Washington: Child Development and Mental Retardation Center, 1975. 12 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED108415.

An annotated bibliography dealing with early childhood education for the handicapped, which contains approximately 50 citations dating from 1961 to 1974, is discussed. The author's name, source, date, title, and information on pagination are included in the citation. A brief evaluative abstract is also provided for most citations. All references are alphabetized under such headings as: Head Start, communication development, parents, curricula, early childhood education and development, paraprofessionals, social factors, integration, and an overview of special education.

1487 MARINELLI, JOSEPH J. Critical issues in the financing of education for the handicapped. Reston, Virginia: State-Federal Information Clearinghouse for Exceptional Children, 1975. 33 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED108406.

Issues related to the financing of educational programs for the handicapped are discussed, including the 3 conditions on which these issues are based: an economy which necessitates the maximizing of educational resources; legislative and constitutional guarantees of equal educational opportunities; and the need for educational programs and services for the handicapped who are presently unserved or inappropriately served. Factors considered in relation to these conditions are the federal government's role in financing programs and services, the costs of special education for the handicapped, federal and state reimbursement policies, and the degree of state funding to programs and services. Recommendations for eliminating problems associated with educating the handicapped include altering state practices which only allow partial funding for educating the handicapped, carefully auditing the costs of education for those children in private institutions, and impressing upon states the realization that the federal government's reimbursement to the state for education will increase, but that educational priorities for resources should be made before funds are allocated.

1488 JONES, C. D., JR. Special education in the states: legislative progress report. Denver, Colorado: Education Commission of the States, 1975. 37 pp. Available form ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED108447.

Bills concerning special education in the states are overviewed. Approximately 75 major bills from 1974-75 are categorized according to state policy; transportation aid; state aid for categorical and general special education programs; rights of handicapped persons; residency requirement; finance formulas/taxation; enrollment limitations/expanded special education services; comprehensive special education services; early education

services; certification of personnel; centers, commissions and offices for special education services; and census/registry/reporting. The state name, bill number, and sponsor are provided for each bill, as well as information concerning the status of each as of March, 1975, and a summary of the basic provisions of each bill.

1489 WYNNE, SUZAN; et al. Mainstreaming and Early Childhood Education for Handicapped Children: Review and Implications of Research Final Report. Washington, D.C.: Wynne Associates, 1975. 296 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$14.59, plus postage. Order No. ED108426.

Mainstreaming and early childhood education for handicapped children are discussed. Historical trends in the education of handicapped children are reviewed, as well as issues in early intervention and in early childhood mainstreaming. Interviews with experts in early childhood education are reported, and problems in researching the effectiveness of mainstream programs are considered. Problems involved in developing an integrated early childhood program, and in moving a child from such a program to an elementary school are noted. A program may be evaluated by its focus on the special needs of the children served; increased public financial support is needed for special programs. A bibliography with author and subject indices is provided, and abstracts are included for many of the entries.

1490 BUNDSCHUH, ERNEST L. Approaches to mainstreaming. Resources in Education (ERIC), 10(11):187, 1975. 27 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED109052.

Two mainstreaming approaches which deal with learning problems and are used in integrated activity curricula are described: a physical activity program composed of regular and adapted physical activities, intramurals, and interscholastic sports; and a program that diverts physical education students into specialized class settings. It is suggested that physical education teachers should be least threatened of all teachers by the

introduction of handicapped students into their classes, since they have always dealt with students of varying capabilities. A well balanced physical education program is encouraged, with emphasis on motor ability capacities, functional fitness, and recreational skill development. The program of the Athens Unit of the Georgia Retardation Center is discussed, which includes referral of the child to the center by the public school or other learning-service agency as having difficulty in developing his abilities, for short-term diagnostic work-up of an educational program that suits the child and can be continued upon return to the community.

1491 Connecticut University. The prediction of elementary school failure among high risk children. Goodstein, H. A., et al. Storrs, Connecticut: Department of Educational Psychology, 1975. 22 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED108749.

The educational progress of a sample of children who participated in the 1966 Head Start program was compared to that of their non-Head Start counterparts. Preschool test results of the children were compared to their sixth grade scores on the Lorge-Thorndike IQs and the Metropolitan Readiness Test (MRT) to determine whether participation in Head Start was a factor in preventing retention in grade and/or special class placement, whether there were differences in sixth grade achievement measures between Head Start and non-Head Start children, the efficiency of a battery of psychoeducational tests administered at the beginning of first grade in predicting academic achievement in the sixth grade, and whether this battery of tests was influential in the discrimination between children who progressed normally and those who were retained or specially placed. It was found that fewer Head Start participants had been retained in grade or placed in special classes, although there were no significant differences in academic achievement at the sixth grade level. The possibility of predicting a high percentage of those who fail to progress as expected in elementary school was also noted, especially with the use of the MRT.

1492 Providing for the preschool child with problems. Resources in Education (ERIC), 10(11):140, 1975. 21 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED108740.

The Saturday School, a school and home learning program developed to identify and remediate the learning problems of 4-year-old MR and learning disabled children, is described. The initial screening procedures include identification and diagnosis of each child's needs and abilities; observations and evaluations are conducted throughout the year in half-day Saturday school sessions and weekly home teaching visits. Activities are suggested as follow-up to parents. Important aspects of the program include in-service teacher training, consultation by specialists, and parent involvement. A primary goal of the program is the integration of handicapped children into regular classrooms. Substantial gains have been achieved and maintained by both MR and learning disabled children in regular elementary school situations. Case studies are provided.

1493 The child with special problems: an evaluation report. Resources in Education (ERIC), 10(11):140, 1975. 30 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED108739.

Four-year-olds identified as having learning disabilities or emotional problems, those labeled as MR or of low intellectual functioning, and parents of children with emotional problems participated in the Saturday School, a school and home learning program in a large suburban school district, in order to study the effectiveness of the program. Data are presented for each of the 3 years the program operated, including standardized test results and ratings, which were administered in a pre-post test design. Additional information is provided on the effects of the Saturday School program on the kindergarten year of those students with emotional problems. For those children with learning-related problems, the program made a significant contribution toward improving their learning abilities, and was helpful to the parents of emotionally disturbed children.

1494 LEFF, RUTH B. Teaching TMR children and adults to dial the telephone. *Mental Retardation*, 13(3):9-11, 1975.

The effectiveness of the Dial-A-Phone (Leff, 1974) in teaching TMRs to use the telephone was demonstrated with MR children at a residential center and with a set of adults in a sheltered workshop. The device consists of a numbered disc which is placed over the telephone dial and a 10-number slide which enables the students to see 1 number at a time. The student matches the number in the window opening of the slide holder to the one on the disc and dials it. Different colors with numbers are used if the S is unable to match numbers. Ninety-six percent of the TMR children learned to dial with this device, compared to 36 percent of Ss taught by other methods. Fourteen of the 16 students who initially failed to learn through methods devised by teachers learned using the Dial-A-Phone. Ninety percent of the TMR adults learned to dial with Dial-A-Phone. Only a few minutes of instruction were necessary. Although adults were less successful than children in learning to dial, they were more successful in recalling their home phone numbers. (2 refs.)

6589 N. Crestwood Drive Milwaukee, Wisconsin 53209

1495 RICHARDSON, TONI. Sign language for the SMR and PMR. *Mental Retardation*, 13(3):17, 1975.

Nine SMR or PMR residents of a training school who were unable to use expressive language (5 physically handicapped) and unable to receive or express language in spite of hearing ability (4 nonhandicapped) were enrolled in a sign language program. One hundred words were selected as vocabulary, with signs introduced as they became relevant to tasks. Production of signs was demanded after the student showed an understanding of the sign and the physical ability and willingness to imitate it. Over 75 percent of the students demonstrated progress in comprehension and expression. After 1 year, expressive vocabulary ranged from acquisition of 400 words by a physically handicapped S to a receptive vocabulary of 20 words by a nonhandicapped S. (5 refs.)

Gestural Language Program Southbury Training School Southbury, Connecticut 1496 THRONE, JOHN M. Normalization through the normalization principle: right ends, wrong means. *Mental Retardation*, 13(5):23-25, 1975.

Normative procedures for treating, training, or teaching MRs should be set aside in favor of specialized techniques designed to speed up the developmental rates of intelligence and related skills. The normalization principle ignores the fact that the MR do not develop normally in response to normative procedures. Procedures which imply ordinary conditions will perpetuate maintainence of MR developmental rates and tend to stabilize the MR in their MR state. Specialized procedures, which imply extraordinary conditions, may tend to move the MR toward normality. The developmental model provides a rationale for decreasing the retardation of the MR and increasing normality as a consequence. (4 refs.)

Lakemary Center for Exceptional Children Paola, Kansas

1497 CARTER, JOHN L. Intelligence and reading achievement of EMR children in three educational settings. Mental Retardation, 13(5):26-27, 1975.

EMR students from segregated self-contained classes, mainstream classes, and traditional elementary school programs were assessed to determine the relationship between intelligence quotient (IQ) and reading achievement in these settings and to determine which setting produces the highest achievement and IQ (Wechsler Intelligence Scale for Children) in all 3 settings. However, achievement did not vary as a function of type of class. Although mainstreaming involves considerable supportive resources for EMRs within an integrated classroom setting, evidence to support the efficacy of this setting in promoting achievement was not found. (12 refs.)

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1498 STRAIN, PHILLIP S.; & CARR, THOMAS
H. The observational study of social reciprocity: implications for the mentally

retarded. Mental Retardation, 13(4):18-19, 1975.

Although existing sociometric data indicate that MR children who are placed in integrated classrooms are subject to negative social evaluations by their peers, much of the underlying research is based on anecdotal data: paper-andpencil sociometry or paradigms derived from studies of non-MR children. Such studies tend to focus on what MRs cannot do, as contrasted to what higher intelligence children are able to do. Observational methodology should be applied to determine the precise behavioral dimensions of social relations within integrated classrooms. One study based on such an approach (Strain and Timm, 1974) indicated that increasing a child's rate of positive social behavior produced a similar increase in the positive social behaviors of the classroom peers with whom she interacted. (12 refs.)

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1499 GINGOLD, WILLIAM; & FLAMER, GEORGE B. A comprehensive mental health program for preschool and schoolage children in rural and non-urban areas. Fargo, North Dakota: Southeast Mental Health and Retardation Center, 1975. 12 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. 111127.

North Dakota's Southeast Mental Health/Retarded Center provides preschool and school programs for normal and handicapped children and their families. A computerized program generating behavioral prescriptions, a materials and toy-lending library, an evaluation and treatment center for the more severely handicapped, a home program for parents of children with developmental delays, and an educational program for parents of normal children are all offered by the preschool program. Referral, consultative, and treatment services for the child and inservice training for teachers are provided by the program for school-age children and their teachers and parents.

1500 RAINEAR, ARTHUR D. Resource Room Approach to Mainstreaming: Supplemental Manual of Representative Materials. Pitman, New Jersey: Educational Improvement Center, 1975. 174 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$8.24, plus postage. Order No. ED111125.

Representative materials designed to be used by educational planners when establishing resource room programs for mainstreaming handicapped children are described. Resources on public relations and communications; staff and facilities; assessment and reporting; schedules, preciptions, and instruction; curriculum and materials; program evaluation; case studies about mainstreaming EMR children; and controversial issues in mainstreaming are divided into 8 color-coded sections.

1501 SHAW, STAN F.; & GILLUNG, TOM B. Efficacy of a college course for regular class teachers of the mildly handicapped. Mental Retardation, 13(4):3-6, 1975.

Teachers who enrolled in a college class on teaching mildly handicapped children in regular classrooms improved their attitudes toward handicapped children (as measured by the Rucker-Gable Educational Programming Scale) after taking the 6-week course, and positive attitudes were maintained on 3-month follow-up. Although the group (10 teachers) who volunteered to take the course did not differ significantly from a group of teachers who did not elect to take the course, the experimental group had somewhat more positive attitudes initially. Skills relevant to teaching mildly handicapped children can be taught to classroom teachers in a relatively short time, but studies are needed to assess the effect of the course on actual teaching behavior and the impact on student performance. (16 refs.)

Special Education Program University of Connecticut Storrs, Connecticut 06268

1502 HANNAFORD, ALONZO E.; SIMON, JUDITH; & ELLIS, DOROTHY. Criteria for special class placement of the mildly retarded -- multidisciplinary comparison. Mental Retardation, 13(4):7-10, 1975.

To ascertain the factors employed by different professional groups in determining the eligibility for special class placement for the mildly MR, data from a hypothetical group of 25 children were submitted to special education administrators, school diagnosticians, regular class teachers, and special class teachers. Data for each child were gathered through a battery of tests representing factors frequently considered in special class placement. Detailed educational data or personality information were not included. A high degree of agreement among groups existed as to the variables considered important in determination of special class placement. Knowledge of the 12 variables employed in the study would enable prediction of how each group of professionals would rank the students with 87 percent accuracy. Chronological age was the primary decision variable used by all groups, but all 4 groups also used Wide Range Achievement Test reading and math scores in suggesting placement. Aside from these areas of consensus, each group used different criteria in recommending placement. (9 refs.)

Department of Special Education Western Michigan University Kalamazoo, Michigan 49001

1503 Georgia University. Music training for severely and profoundly retarded individuals. Kesler, Buford; & Richmond, Bert O. Athens, Georgia, 1975. 15 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED111128.

The influence of sex, ability, and training method on the ability of 16 7-20-year-old institutionalized SMR and PMR persons to play a musical instrument was examined. The time required to reach criterion-playing a familiar tune-was recorded for subjects randomly assigned to 1 of 4 treatment groups. Findings demonstrate that some SMR and PMR persons are capable of learning elementary music skills. There were no significant effects of sex or training method, but initial ability did influence the level of playing ability after training.

1504 PLETILA, ASTA; & LAUKKANEN, REIJO. The position of special education in Finland. No. 2, 1975. Helsinki, Finland: Finnish National Board of Education,

Research and Development Bureau, 1975. 23 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED111131.

The planning, organization, provision, availability, and different organizational solutions applied to special education in Finland are discussed. The needs of the individual child are stressed, following the philosophy of Finnish school reform. Special education and special teachers are available, and the addition of special education content to the training of regular teachers is anticipated. The number of special schools is decreasing, and the improvement of clinic-type special education, remedial instruction, pupil welfare services in normal schools, and prevention are being emphasized. Children with cerebral palsy and children with aural and visual handicaps are provided with special municipal and state educational programs, Statistics on the number of teachers and pupils in special education in 1973-1974 are provided, along with a chart showing the organization of special education in Finland.

1505 Sex education: a selective bibliography. Exceptional child bibliography Series No. 605. Reston, Virginia: Council for Exceptional Children, 1975. 20 pp. Available from CEC Information Services and Publications, 1920 Association Drive, Reston, Virginia 22091. Price \$4.00. Order No. ED102806.

Approximately 75 abstracts are included in this annotated bibliography of sex education documents published from 1962 to 1974. Materials included were chosen from the computer files of the Council for Exceptional Children's Information Services and the Educational Resources Information Center (ERIC). Titles were selected with consideration of user requests and analysis of trends in the field of sex education. Bibliographic data (identification or order number, availability, publication data, source or publisher, author, and title), descriptors indicating the subject matter covered, and summaries of the documents' contents are included in the abstracts. Curriculum, educational programs, and instructional materials are all covered. Terms searched to compile the bibliography, journals from which articles were abstracted, and instructions for ordering copies through ERIC are all listed.

1506 WELCH, MICHAEL WARREN. The effects of three methods of teaching reading to retarded children with different degrees of visual function difficulties. Resources in Education (ERIC), 10(7):70, 1975. 12 pp.
Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED102767.

The effects of 3 methods of instruction in reading were assessed during an 8-week period among 36 fourth through sixth grade reading retarded children with different degrees of visual function impairment. The children, who had perceptual impairments rather than visual acuity difficulties, were separated into 2 groups according to the degree of severity of their problems. Ss were randomly assigned to one of the following treatment groups: 1) Ginn basal reading materials augmented by a language experience approach; 2) Sullivan programmed material as directed in the teacher's guide; and 3) Sullivan material augmented by tutoring and behavior modification. There was no significant influence on Ss' reading achievement during the 8-week period that could be attributed to the instructional method or to the extent of visual impairment, although mean improvements tended to be higher for programmed materials than for the language experience approach.

1507 BIRCH, JACK W.; & JOHNSTONE, B. KENNETH. Mainstreaming-a new public policy in education. Resources in Education (ERIC), 10(12):68, 1975. 11 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED109740.

The practice of mainstreaming, a new public policy in education and a key concept in the treatment of the handicapped, is defined as progressively including and maintaining handicapped pupils in regular classes while at the same time providing quality special education. It is in the national interest to treat handicapped and normal children equally, from the viewpoints of human rights, economics, educational effectiveness, and social desirability. Traditional segregation of the handicapped must be eliminated, and handicapped children should be taught by regular class teachers who are supported by special

educators. Rejection of the practice of labeling, improved instructional tools, cost effectiveness, and legislative decisions are among the reasons for the emergence of the concept of mainstreaming.

Missouri University. Career education: its implications for the educable retarded. Project Price working paper No. 3. Gysbers, Norman E.; & West, Lynda L. Columbia, Missouri: Department of Counseling and Personnel Services, 1975. 22 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED109838.

Project PRICE (Programming Retarded in Career Education) is designed to provide career education to EMR from kindergarten through grade 12. The issue of the work ethic vs. the life ethic is critically important to the emphasis of the career education program. Daily living skills, including management of family finances and caring for personal needs, are taught, along with personal social skills such as the development of self-confidence and effective communication. Project PRICE also provides occupational guidance and preparation in the form of learning experiences in exploring occupational possibilities and the practice of appropriate work habits and behavior.

TUFTS, JEAN. A Report on the Development of Vocational Programs for Exceptional Children. Durham, New Hampshire: New England Program in Teacher Education, 1975. 225 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$10.78, plus postage. Order No. ED109854.

The vocational needs of handicapped children in a New Hampshire School district, the potential for their employment in the community, and the school potential for vocational programs were investigated in a 1974-1975 project. The number of children with different types of handicaps was determined, businesses interested in employing the handicapped were listed, and sheltered workshops in the area were evaluated. The special education program in the school district was evaluated, and its philosophy and future objectives were delineated. It was recommended that a vocational

rehabilitation counselor and a social resource field person be employed in order to develop vocational programs in special schools and classes. Handbooks for interviews of parents and of businesses and reporting forms for gathering information on vocational programs, businesses, and social agencies serving the handicapped were also developed.

1510 Hawaii. Education Department. State Plan for Special Education and Services. Honolulu: Office of Instructional Services, 1975. 126 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$6.97, plus postage. Order No. ED109851.

Hawaii's state plan for the provision of special education and services to handicapped children includes: the philosophic and legal bases for the plan; the special education roles and responsibilities of the State Department of Education and other cooperating public and private agencies; program delivery options; identification, diagnosis, and prescription; career and vocational education; preservice and inservice training and certification of special education personnel; management systems; and implementation plans. The plan provides for the education of all handicapped children under the age of 20 by 1980-1981. The philosophic bases for the plan include the right to equal educational opportunities for children with MR, hearing handicaps, speech impairments, visual handicaps, physical handicaps and special health problems, serious emotional disturbances, specific learning disabilities, or multiple handicaps. Section 301 of Hawaii's revised statutes concerning exceptional children is appended.

1511 Missouri University. Daily living, personal-social, and occupational skills development for educable retarded students. Project Price working paper No. 4. McIntosh, Sava; et al. Columbia, Missouri: Department of Counseling and Personnel Services, 1975. 48 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED109839.

Project PRICE (Programming Retarded in Career

Education) is a career education program for primary through secondary school age EMRs. It defines 22 behavioral objectives in providing competency in occupational guidance and preparation, personal social skills, and daily living skills. The achievement of these competencies fulfills the basic objectives of career educational programs for EMR students. Skills to be mastered in each area are defined as subcompetencies and include such abilities as dressing appropriately, knowledge of physical fitness and nutrition, and knowledge of illness prevention and treatment.

1512 Maine. State Department of Educational and Cultural Services. Learning disabilities activity guide for the elementary classroom. Labrie, V. Augusta, Maine, 1975. 55 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MR \$0.83; HC \$3.50, plus postage. Order No. ED117907.

The learning disabilities activity guide, which is intended for the regular elementary classroom teacher serving learning disabled children, provides suggestions in the areas of motor development, visual perception, auditory perception, and language development. Body image, balance, fine motor coordination, directionality, gross motor coordination, and activities of the Purdue Perceptual Motor Survey are categories which are grouped under motor activities. Visual perception is considered in terms of visual reception, visual sequencing and directionality, visual memory, position in space, constancy of shape, figureground discrimination, and visual association. Auditory awareness, auditory reception, auditory discrimination, and auditory sequential memory are aspects of auditory perception for which activities are provided. Suggestions are also offered for improving verbal expression, the normal development of speech, written expression, and manual expression.

Mercer House Press Box 681 Kennebunkport, Maine

1513 PARKER, SCOTT L.; et al. Improving Occupational Programs for the Handicapped. Washington, D.C.: Management Analysis Center, Inc., 1975. 231 pp. Available from ERIC Document Reproduc-

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tion Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$12.71, plus postage. Order No. ED117914.

Suggestions are offered for improving occupational programs for the handicapped, based on a study of 30 existing vocational education programs. The 30 programs studied are classified as modified programs for handicapped students in the regular classroom, special programs for the handicapped in segregated classrooms, or special programs for severely handicapped students in special classes or residential schools. Topics discussed include laying the physical groundwork for a program, designing the program, focusing on the student and meeting the student's needs, preparing for specific skill training, providing related or academic instruction, obtaining supportive and social services, assisting in the transition to the work world, conducting job placement and followup, and achieving interagency, interdistrict, and community coordination and cooperation. A checklist for program evaluation and detailed studies of the 3 types of programs are also provided.

1514 Project SHARE: sharing high-yield accountability with resource educators. Crookston, Minn.: Regional Interdistrict Council for Special Education, 1975. 44 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED117915.

The operation of the special education systems used in Project SHARE (Sharing High-Yield Accountability with Resource Educators) is reviewed. The project developed from a need to provide service for handicapped children in a sparsely populated area. The only constants in the program are daily measuring and diagnosing, charting on a standard behavioral chart and the feedback system. Components of the project include a resource flow chart, critical variables in administration and the child study system, the instruction and services system (focusing on the skills of a tutor), diagnosis, samples of informal reading and math materials, and use of a standard behavior chart. A computer evaluation of the special education program effectiveness in 1 school district is provided, including information on cost effectiveness.

1515 KESTER, DONALD L.; & LOTZ, PATRICIA. Are we helping our educationally handicapped students? California: Claremont Unified School District, 1975. 33 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210, Price MF \$0.76; HC \$1.95, plus postage. Order No. ED116437.

The Special Day Program for elementary level educationally handicapped students in a California school district was evaluated and audited. The classes were established to provide an intensive remedial program for students with severe learning disabilities. Three alternative program evaluation services were considered, and a 7-stage educational program audit approach was chosen. Interim and final evaluation and audit report statements were prepared for specific program objectives. It was found that individual instructional activities had been outlined for each student in the program, and objectives with regard to student gains on the Metropolitan Achievement Test and the Gilmore-Oral Reading Test had been met. References are listed which may be helpful in planning an educational program evaluation and audit, and a social adequacy scale and examples of objectives from the audit plan are appended.

1516 California University. Correlates of Success in Transition of MR to Regular Class. Volume 1. Final Report. Meyers, C. Edward, et al. Los Angeles, California: Neuropsychiatric Institute, 1975. 208 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$10.78, plus postage. Order No. ED116441.

Correlates of success in transition of MRs to regular classes were determined. The status of 1711 Anglo, Black, and Spanish-surnamed California EMR students who were decertified by court order in 1969-1972 was analyzed. No differences were found at EMR placement between those later decertified and those not later decertified. Although regular class students matched for sex and ethnicity scored higher on the Metropolitan Achievement Test, and EMR students scored lowest, many regular class and decertified students were both several grade levels below nominal placement and greatly overlapped. There was little ethnic difference and little difference between regular class and decertified Ss on teacher ratings

of citizenship and achievement, social acceptance, and adjustment on teacher questionnaire responses (both means tended to be under average for their classes). It is concluded that, while decertification did not make the students average, they did tend to succeed nearly as well as regular class matches.

Missouri University. Career education materials for educable retarded students. Working paper No 6. Malever, Michael; & Matyas, George, Jr. Columbia, Missouri: Department of Counseling and Personnel Services, 1975. 45 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED116443.

Approximately 150 instructional materials and 50 publications concerning career education for EMR students are included in this bibliography, which was developed by Project PRICE (Programming Retarded in Career Education). References are arranged in order of their applicability to the 22 competencies defined by Project PRICE in the areas of daily living skills, personal-social skills, and occupational guidance and preparation. Age level designation, cost, name of publisher or supplier, and a brief annotation containing suggested use applications, populations, and reading or grade level are provided for most materials. References to publications include annotated citations for general career education, career education for handicapped persons and EMR persons, relevant journals, retrieval sources, and career exploration and work sample packages.

1518 STEPHENS, ESTHERDALE; & JONES, LINDA. An educator's blueprint: a guide to programs and services K-12. Resources in Education (ERIC), 10(6):68, 1975. 116 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$5.70, plus postage. Order No. ED101500.

A plan for providing programs and services for learning disabled (LD) children in grades K through 12 is presented, which includes the assignment of children to resource rooms for a portion of each school day with the goal of remediation and return to the educational mainstream. The 5 levels of service, from

developmental kindergarten programs to private placement, are outlined, as well as specific service objectives for each level. A model educational team, which is composed of roles such as the classroom teacher, reading specialist, and psychologist, is presented and LD teacher qualifications are noted. Guidelines for starting an LD program are provided, including workshop objectives, types of meetings, and a form for inservice evaluation. Charts on admission and screening processes and forms for prereferral and pupil evaluation are also covered. Organizational options such as the diagnostic-consultive option and the resource option are described and their advantages and disadvantages examined. Sample proposals for program planning include a parent-school interaction program and an elementary screening program. Organizations serving LD children, professional journals, inservice films, tests, and materials are listed.

1519 HUNSAKER, DON, et al. Eastern Washington Special Education Consortium Training and Certification Program for Special Education Teachers at the Elementary Level. Cheny, Washington: Eastern Washington Special Education Consortium, 1975. 154 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83, plus postage. Order No ED117873

A competency based teacher education (CBTE) program for training and certification of elementary level special education teachers is discussed, which represents the program development phase of the Eastern Washington Special Education Consortium. In order to be certified in the 3 levels of the program, students must be reviewed by a 3 man committee at each level. The 3 levels are: the preparatory level, which a trainee must reach before being allowed to student teach; the initial level, which is normally reached upon completion of B.A. degree requirements and allows a trainee to teach the handicapped; and the continuing level, which is equivalant to a graduate program and qualifies the trainee to act as an advisor within the training program. Information is provided on the history and advantages of the CBTE program, consortium by-laws, program management, preparation program, and the implementation process in table form for elementary school teachers at the various levels. Program planning sheets for each of the 3 levels of certification and estimated budget for first year operations are included.

1520 Project FAST (Functional Analysis Systems Training): adopter/facilitator information. Essexville, Mich.: Essexville-Hampton Public Schools, 1975. 21 pp. Available form ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83, HC \$1.67 plus postage. Order No. ED117925.

The use of the adopter/facilitator information of Project FAST (Functional Analysis Systems Training), a program to provide education and support services to learning disordered children and their regular elementary teachers, in 3 schools in the Essexville-Hampton, Michigan, school district is discussed. The objectives of the program, program inputs, processes and outcomes, and program schedule of the 3 schools are described, and outcomes such as increases in reading and mathematics acheivement levels, a decrease in discipline problems, and expansion of the program to 201 classrooms in the Bay City, Michigan, area are reported. Criteria to be used in the selection of adopters are noted, including required target population characteristics, staffing requirements, instructional material requirements, financial resources, and training required of adopters. Facilitator information is also provided, including a listing of available awareness material, product and process objectives, criteria to be used in the rejection of adopters, demonstration/visitation capability, training capability, and training schedules.

1521 Project FAST. Essexville, Mich.: Essexville-Hampton Public Schools, 1975. 37 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No ED117923.

Project FAST (Functional Analysis Systems Training), a nationally validated project to provide more effective educational and support services to learning disordered children and their regular elementary classroom teachers, is described. A series of modules serve as a base of the program, ranging from mainstream teachers working with building principles and parents (module 1) to consultants, specialists from the community, and community agencies (module 3). It is important to train teachers in the following developmental objectives: observation of how the child goes about learning, analysis of what each task

demands, analysis of the developmental level, prescription of the specific educational program, organization of the classroom, helping children in directing their own behavior appropriately, being receptive to support help, and teamwork with peers and parents. A model of a functional learning system, a flow chart of project implementation and forms to use at the individual school or school district are also provided.

1522 COLLISTER, LARRY. A comparison of the long range benefits of graduation from special vs. mainstream school for mildly mentally handicapped students. Seattle, Washington: Seattle Public Schools, Dept. of Planning, Research, and Evaluation, 1975. 15 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$16.67, plus postage. Order No. ED117870.

The long range benefits of graduation from a special vs. a mainstream school were compared with 27 mildly and moderately MR graduates from a special school and 23 mildly and moderately MR graduates from a mainstream school. Interviews with the Ss 1 and 2 years after graduation measured differences in employment skill levels, unemployment rates, job satisfaction, arrests and convictions, welfare assistance, financial independence, income level, and other variables. There were few differences found in the long range characteristics for either group, but the small sample size precludes drawing firm conclusions.

1523 GOODWIN, LANE A. Mainstreaming – a negative approach. Resources in Education (ERIC), 10(9):178, 1975. 7 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED106289.

A negative view of mainstreaming handicapped individuals into physical education classes is presented. The results of mainstreaming have often been questionable, and studies reveal that, in some cases, the approach has been discarded as inappropriate. Factors which should be considered before initiating mainstreaming in physical education include class size, adequate assessment of the individual to be placed in a mainstreaming

program, and the capabilities of the physical education generalist. It is concluded that preservice and inservice training of all personnel in adapted physical education must be required before the disabled and otherwise handicapped population can be appropriately mainstreamed.

1524 WOLF, JUDITH M.; & MCALONIE, MARY LYNNE. A multimodality language program for retarded preschoolers. Resources in Education (ERIC), 11(6):87, 1976. 15 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MR \$0.83; HC \$1.67, plus postage. Order No. ED117871.

A multimodality language program used with 8 MR preschoolers resulted in substantial gains in receptive language for all Ss and notable expressive language gains for half of the Ss. Day activity teachers worked with the Ss 3 times weekly for 7 months using the Minnesota Early Language Development Sequence (MELDS) in order to stimulate verbal (expressive) language behavior and increase receptive language development. The MELDS program was combined with 2 visual language systems: rebuses (picture words) and the vocabulary of American Sign Language.

1525 Texas A and M University. A Model for Evaluating Programs in Vocational Education for the Handicapped. Final Report. Becker, Gerald; & Christiansen, James E. College Station, Texas: College of Education, 1975. 179 pp. Available from ERIC Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$9.51, plus postage. Order No. ED115984.

A model for evaluating programs in vocational education for the handicapped was field-tested by conducting evaluations of 16 pilot programs in 7 State schools and State hospitals in Texas. It was concluded that the model program concepts were more applicable to vocational education programs in public secondary and post-secondary institutions than to pilot programs in the State schools/hospitals. Evaluation teams from the field of vocational education or special education for the MR collected the data. The testing indicated that the model was useful for collecting and

evaluating appropriate data to determine program effectiveness. Detailed information concerning model development, test procedures, and findings is included, as well as the vocational program evaluations. Computer program information and the instruments used to obtain the evaluation statement ratings (questionnaires to conduct personal interviews with directors, counselors, program instructors, vocational students, and employers) are also provided.

1526 Educating the 24-hour Retarded Child:
National Training Meeting on Education of
the Severely and Profoundly Mentally
Retarded. Arlington, Texas: National
Association for Retarded Citizens, 1975.
217 pp. Available from ERIC Document
Reproduction Service, Box 190, Arlington,
Virginia 22210. Price MF \$0.76; HC
\$10.78, plus postage. Order No.
ED116376.

Papers presented at a meeting on the education of SMR and PMR students, which was held in New Orleans, Louisiana, March 31–April 2, 1975, are presented. Topics considered included: financial factors; instructional program components; teacher education; parent involvement and training; education in nonschool settings; architectural considerations; the developmental approach to curriculum; and educational programs. The works of 18 contributors to the conference are reviewed.

1527 ALELLO, BARBARA. Making It Work: Practical Ideas for Integrating Exceptional Children into Regular Classes. Reston, Virginia: Council for Exceptional Children, 1975. 112 pp. Available from Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091. Price \$5.50. Publication No. 120.

A guide intended for special education and regular teachers contains information on the nature of mainstreaming handicapped children; mainstreaming models at the preschool, elementary school and secondary school levels; specific suggestions for initiating mainstreaming programs; and interviews with 5 persons involved in mainstream education. Specific programs described include the Lexington Nursery and Kindergarten School, the diagnostic/prescriptive teacher and the Mark Twain Programs, and the definition, development,

and characteristics of mainstreaming are discussed. Transcripts of interviews with persons involved in mainstream education, which included an administrator, a regular classroom teacher, a resource teacher, the parent of a mainstreamed child, and a mainstreamed child are provided. Information regarding the development and initiation of mainstream programs is also included.

1528 RUBIN, JOSEPH ISRAEL. A conceptualized, replicable school building administrative model for the vocational education of educable mentally retarded learners in large cities. *Dissertation Abstracts International*, 39(6):3624A-3625A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,137.

The administrative organization of schools in a large city that provide vocational education programs to meet the pre-employment training needs of EMRs was investigated, and a conceptualized, replicable school building administrative model was designed on the basis of the study findings. On-site observations seeking local school administrative patterns of vocational education for EMR youth were made in 3 large cities. Data were obtained within 1 of these cities from former EMR students, their employers, and school principals who administered vocational programs for secondary age EMR learners. The findings revealed that school types with high initial placement and continued employment of students have a principal directly responsible for vocational education programs, enrollment of learners in all vocational courses offered, job placement services provided, and 1 or more counselors available. Students from occupational centers were found to be employed sooner and to have fewer job changes than those from dual schools or comprehensive high schools. The conceptualized model encompasses a quality academic/vocational program within an occupational center and an administrative organization including an educational leader, a human resources coordinator, a job training coordinator, and a teaching team, among other personnel.

Temple University Philadelphia, Pennsylvania 1529 LEISS, ROBERT HENRY. The effect of intensity in a psycholinguistic stimulation program for trainable mentally retarded children. Dissertation Abstracts International, 36(6):3565A-3566A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28.287.

One hundred and twenty TMR children (CA 5 to 15 years, IQ 21 to 53) enrolled in 24 public and parochial school special education classes were studied for the effects of a psycholinguistic stimulation program based upon the Illinois Test of Psycholinguistic Abilities (ITPA) and directed at TMRs. The 24 intact classes were assigned at random to a control group, an experimental group receiving the program 4 times per week, or an experimental group receiving the program 8 times per week. The program consisted of 96 lessons based upon tasks embedded among the 12 ITPA subtests. Analyses of all pretest differences showed all treatment groups to be comparable, and posttest results indicated no generalizable differences among treatments. High-IQ Ss of the control group exhibited change on more criteria than the same subgroups of the other 2 treatment groups. Females did better in the low-IQ group, and males performed better in the high-IQ group. Low-IQ Ss did not change significantly, while high-IQ Ss showed regression on many of the criteria. The techniques employed were not effective with the study population.

Temple University Philadelphia, Pennsylvania

1530 LISTER, DOLORES ANN. The relationship of school placement of preadolescent mentally handicapped students to measured achievement and self-concept Dissertation Abstracts International, 36(6).3408A-3409A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-29,046.

Seventy-five black male low-socioeconomic preadolescents (CA 9 through 11 years) with IQs ranging from 55 to 75 participated in a comparative study of the academic achievement and self-concept scores of educable mentally handicapped (EMH) students in a resource room, a regular class, a self-contained EMH class in a

regular school, and a self-contained EMH class in a central facility. The students were not randomly assigned to treatment groups but remained in the placement model to which they were assigned at the beginning of the school year. The Peabody Individual Achievement Test and Piers-Harris Children's Self-Concept Scale (The Way I Feel About Myself) were administered on a pretestposttest basis, and analysis of covariance was employed. There were no significant differences among the EMH students placed in the 4 different models on any of the achievement subtests or total achievement test scores or on the self-concept measure at the confidence level accepted for the study (.01). The findings indicated that the placement model is not a primary determinant of academic achievement or of self-concept.

1159 India Hook Road Rock Hill, South Carolina 29730

1531 KAPPELMAN, MURRAY; et al. The school health team and school health physician: new role and operation, Resources in Education (ERIC), 10(8):181, 1975. 20 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED104837.

A school health team which operated in 10 elementary schools near the University of Maryland Hospital was developed to create a coordinated, educational interdisciplinary school health model which would provide diagnoses, referral, or on-site therapy, as well as prescribe a definitive program for children with learning and behavior disorders, and to deliver this program to primary schools. The program provided on-site health care based on educational and emotional disabilities, with referral to outside medical agencies for those children with serious physical problems. The team was composed of a school nurse, social worker, psychologist, school physician, speech therapist, secretary, and a specially assigned full-time diagnostic and prescriptive teacher. Results of the program revealed that: the number of children referred for learning and behavioral problems increased by 70 percent; there was a high response to medication; children with learning and behavior problems often suffer from multiple problems; among elementary school aged children, hyperkinesis is not uncommon; a higher percentage of functional diagnoses occurred in children aged 9-13, while a higher percentage of children aged 5-6 received organic diagnoses.

1532 THIAGARAJAN, SIVASAILAM; SEM-MEL, DOROTHY S.; & SEMMEL, MELVYN I. Front-end analysis. In: Thiagarajan, S.; Semmel, D. S.; & Semmel, M. I. Instructional Development for Training Teachers of Exceptional Children: a Sourcebook. Minneapolis, Minnesota: Leadership Training Institute/Special Education, University of Minnesota, 1974, Chapter 2, pp. 15-23.

As one of the various problem-solving techniques available to the teacher trainer in special education, instructional development allows training objectives to be selected that can be validated against teacher effects with exceptional children. The need for instruction and instructional material arises when a teacher trainee's performance is below a defined criterion level. When a discrepancy is found between the criterion and the actual performance, performance problems which lend themselves to instructional solutions should be identified. Available instructional materials are located by searching systematically for appropriate references. A checklist for assessing instructional materials aids in the decision whether to adopt, adapt, or reject. (13-item bibliog.)

Center for Innovation in Teaching the Handicapped Indiana University Bloomington, Indiana

1533 THIAGARAJAN, SIVASAILAM; SEMMEL, DOROTHY S.; & SEMMEL, MELVYN I. Learner analysis. In: Thiagarajan, S.; Semmel, D. S.; & Semmel, M.I. Instructional Development for Training Teachers of Exceptional Children: a Sourcebook. Minneapolis, Minnesota: Leadership Training Institute/Special Education, University of Minnesota, 1974, Chapter 3, pp. 25-29.

Learner analysis is the preliminary stage of instructional development in which the characteristics of the target students which are relevant to the design of materials are identified. Target students are the teachers of exceptional children

or other important persons involved in the education of exceptional children. An analysis of a group of learners must focus not only on the similarities but also on the differences characterizing the group. Learner analysis directly affects all succeeding stages of instructional development. Since learner analysis is the identification of the learners' actual, rather than ideal, entry characteristics, informal techniques (recall, interviews with other teacher trainers and with the learner, literature research, criterion test) may be employed to perform a learner analysis when the target students are enrolled. (15-item bibliog.)

Center for Innovation in Teaching the Handicapped Indiana University Bloomington, Indiana

1534 THIAGARAJAN, SIVASAILAM; SEM-MEL, DOROTHY S.; & SEMMEL, MELVYN I. Task analysis. In: Thiagarajan, S.; Semmel, D. S.; & Semmel M. I. Instructional Development for Training Teachers of Exceptional Children: a Sourcebbook. Minneapolis, Minnesota: Leadership Training Institute/Special Education, University of Minnesota, 1974, Chapter 4, pp. 31-41.

Task analysis, the means by which the instructional task is broken down into various component parts, forms the basis for both the construction of measuring instruments and the design of instructional materials. The type of instructional task, as determined by this analysis, suggests the media to be used and the instructional format. Task analysis involves the study of a master performer's behavior and the identification of its components. With cognitive skills, the analysis depends more upon interviews with subject-matter experts than upon observation. The process includes specification of the main task and identification of subtasks at the preceding level of complexity, treatment of each subtask as a main task and repetition of the analytic procedure, and termination of the analysis when the subtask reaches the entry level of the teacher trainees. A checklist helps to determine the completeness and effectiveness of task analysis.

Center for Innovation in Teaching the Handicapped Indiana University Bloomington Indiana 1535 THIAGARAJAN, SIVASAILAM; SEMMEL, DOROTHY S.; & SEMMEL, MELVYN I. Concept analysis. In: Thiagarajan, S.; Semmel, D. S.; & Semmel, M. I. Instructional Development for Training Teachers of Exceptional Children: a Sourcebook. Minneapolis, Minnesota: Leadership Training Institute/Special Education, University of Minnesota, 1974, Chapter 5, pp. 43-48.

With the use of concept analysis, the instructional developer can analyse a set of concepts which are pertinent to the teaching of exceptional children, arrange them in hierarchies, and identify the critical and irrelevant attributes of each. Concept analysis seldom progresses deductively from the superordinate category through individual concepts to subordinate attributes; rather, it is a back-and-forth movement across various levels. Graphic charts provide a framework for a set of related concepts and facilitate the location of gaps in the concept hierarchy. Later, during the design of instructional materials, the various levels of concepts suggest diverse sequencing strategies. Concept analysis from the area of behavior management techniques used by teachers is employed to further define self-involvement, physical interaction, physical agression, and verbal aggression and resistance, among other concepts.

Center for Innovation in Teaching the Handicapped Indiana University Bloomington, Indiana

1536 THIAGARAJAN, SIVASAILAM; SEM-MEL, DOROTHY S.; & SEMMEL, MELVYN I. Specifying instructional objectives. In: Thiagarajan, S.; Semmel. D. S.; & Semmel, M. I. Instructional Development for Training Teachers of Exceptional Children: a Sourcebook. Minnesota, Leadership Training Institute/ Special Education, University of Minnesota, 1974, Chapter 6, pp. 49-56.

The specification of instructional objectives is the transformation of task and concept analysis into statements of goals for instructional material. It is generally agreed that the most useful behavioral objectives for instructional development and evaluation are those that specify the desired terminal behavior of the trainee. Behavioral

objectives can be derived systematically through a 5-step process involving specification of the teacher trainee's terminal behavior (or the desired results), indication of the range of situations under which he is expected to perform, specification of the materials and the equipment which may be used, indication of the standards for acceptable performance by the teacher trainee and for his product, and specification of a time limit for the performance or completion of the product. Behavioral objectives often turn out to be mechanical and trivial; however, more appropriate behavioral terms may be identified through a more thorough search. An analysis of a concept can be converted into nontrivial behavioral objectives through the 5-step process. (11-item bibliog.)

Center for Innovation in Teaching the Handicapped Indiana University

1537 BAILEY, RALPH E.; & BRYANT, DIANA G. The Child Study Center program. Resources in Education (ERIC), 10(8):42, 1975. 9 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$158, plus postage. Order No. ED103821.

The Child Study Center (CSC) provides diagnostic, consultative, and prescriptive intervention to students with serious learning problems, and assists them in experiencing success in school. The CSC is part of the Pinellas County, Florida, Pupil Services Demonstration Project, and an Elementary Secondary Education Act Title III project. An interdisciplinary team approach is used in order to comprehensively evaluate children who exhibit behaviors indicative of multiple problems which are hindering learning. Direct contacts with the child and with those who are influential in his life are necessary to implement the composite remedial strategies. Cooperation and exchange of information among CSC, school, home, and community resources are recommended in order to provide services which lead to successful experiences for the children. Quantitative statistical procedures of the CSC program which have been valuable in evaluating learning aptitude, oral reading abilities, cognitive development, and mental and physical health functioning, are noted.

1538 Head Start services to handicapped children. Third annual report of the U.S. Department of Health, Education, and Welfare to the Congress of the United States on Services provided to handicapped children in Project Head Start. Washington, D.C.: Office of Child Development (DHEW), 1975. 31 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED118239.

The status of handicapped children in Head Start programs during Fiscal Year 1975 is reported, including the number of children served, their handicapping conditions, and the services provided. At least 10.4 percent of children enrolled in full-year Head Start programs have been professionally diagnosed as handicapped, and nearly 57 percent of these children required "practically constant" special assistance. A primary service offered to handicapped children by Head Start programs is the chance to be in a developmental environment with nonhandicapped children. Other services offered by Head Start include counseling for families of handicapped children, modifying physical facilities, and providing special equipment. Diagnostic criteria for identifying handicapped children for inclusion in the Head Start program are provided. The requirement that the staff of programs enrolling handicapped children must have additional training is noted, as well as the attempts of 14 experimental programs to develop new methods of serving handicapped Head Start children. The results of a state-by-state survey of Head Start services provided to handicapped children are also presented.

1539 An assessment of the effectiveness of the Money, Measurement and Time program for EMR children. Research report No. 88. Turlow, Martha L.; et al. Minneapolis, Minnesota, 1975. 94 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$4.43, plus postage. Order No. ED115043.

A final evaluation was made of the Money, Measurement and Time Program, using as subjects 272 EMR elementary school children and comparing results with those obtained for non-MR children. The effectiveness of each unit was

evaluated using criterion referenced pretests and posttests, and Ss' general improvement in noncontent-specific areas of functioning was assessed with a Cognitive Abilities Test. Ss' abilities were significantly improved in the Money and Time with the Clock units, but not on the Length and Measurement of Weight units. It was also found that Ss' learning was applied to noncontent-specific areas of knowledge. Revisions in specific content for each unit are recommended.

1540 THIAGARAJAN, SIVASAILAM; SEM-MEL, DOROTHY S.; & SEMMEL, MELVYN I. Introduction. In: Thiagarajan, S.; Semmel, D. S.; & Semmel, M. I. Instructional Development for Training Teachers of Exceptional Children: a Sourcebook. Minneapolis, Minnesota: Leadership Training Institute/Special Education, University of Minnesota, 1974, Chapter 1, pp. 3-12.

The Four-D Model systems approach to selecting training objectives that can be validated against teacher effects with exceptional children divides the instructional development process into 4 stages. The Four-D model is based upon recent models that have employed the common steps of analysis, design, and evaluation. It distinguishes a stage designed to stipulate and define instructional requirements (Stage 1: Define), a stage for designing prototype instructional material (Stage II: Design), a stage allotted for the modification of prototype instructional material (Stage III: Develop), and a final stage for developmental testing, validation testing, packaging, and diffusion and adoption (Stage IV: Disseminate). Although the steps in the development process are the same for large-scale and small-scale projects, time and manpower requirements will increase according to the complexity and length of instructional content. (16-item bibliog.)

Center for Innovation in Teaching the Handicapped Indiana University Bloomington, Indiana

1541 THIAGARAJAN, SIVAS'AILAM; SEMMEL, DOROTHY S.; & SEMMEL, MELVYN I. Instructional Development for Training Teachers of Exceptional Children: a Sourcebook. Minneapolis, Minnesota: Leadership Training Institute/Special Education, University of Minnesota, 1974. 195 pp. \$550

Theoretical constructs and practical procedures for the development and dissemination of instructional materials for special education teacher preparation programs are presented. Topics range from the determination of the need for new instructional materials and the actual processes of creating and evaluating modules of instruction to the mass production and distribution of the finished module. A glossary of instructional development terms is appended. (63 ref.)

CONTENTS: Introduction; Stage I: Define; Stage II: Design; Stage III: Develop; Stage IV: Disseminate.

1542 BOTT, KRISTINE ANN; & BANNASCH, DONALD MAX. Discovery: Guidelines for Establishing an Outdoor Education Program in Special Education, ESEA Title III Project. Mount Clemens, Michigan: Macomb County Intermediate School District, 1975. 75 pp. Available from Macomb Intermediate School District Special Education, 44001 Garfield Road, Mt. Clemens, Michigan. Price \$35.00 per set. Order No. ED118339.

The outdoor education program in special education in Mount Clemens, Michigan, which serves youngsters handicapped either physically, mentally or emotionally, was initiated in the fall of 1971. The program is funded through the 1965 Elementary and Secondary Education Act (ESEA) Title III, and strives to test an outdoor education model for improving the learning and lives of these children, train special education teachers to use the outdoors to provide learning opportunities to these youngsters, and improve these youngsters' achievement in regular school subjects, their self-concepts, interpersonal relationships, and leisure skill. Ideas which have been successful during 3 years of operation are presented, as well as the methods and procedures necessary in beginning and continuing such a program. The topics reviewed include counselors, resource people, permission slips and health forms, disability considerations, evaluation, winter activities, rainy day activities, hikes and scavenger hunts, fire, arts and crafts, physical education, music, academic studies, equipment, kitchen duties, camp rules, first aid, transportation, insurance, schedules, the outdoor laboratory site, preplanning, and teacher in-service.

Project FAST: final report Essexville, Mich.: Essexville-Hampton Public Schools, 1975. 52 pp. Available from ERIC Document Reproduction Service, Box 190. Arlington, Virginia 22210. Prices MF \$0.83; HC \$3.50, plus postage. Order No. ED117926.

The objectives and evaluation data of the Essexville-Hampton, Michigan, Project FAST (Functional Analysis Systems Training) program, which was designed to provide efficient educational and support services to learning disordered children and their regular elementary teachers, are discussed. The 3 modules for delivering educational services, 9 basic teaching skills, a model of a learning system, and a flow chart of a delivery system which incorporates a change process are described, and accomplishments such as reduction of the time lag between identification of pupils with learning problems and specific treatment, cost effectiveness, and demonstrated exportability are listed. Evaluation data are provided for 4 performance objectives for each of 2 project goals: the development and implementation of a demonstration and dissemination model, and monitoring of project activities to show their impact on children. Effectiveness information for 1973-74 is evaluated, noting the expansion from 20 programs in 1971-72 to 149 in 1973-74. A description of a decision-making process for adopter districts to use to determine the goals and objectives for their district is also included.

1544 DOLLY, JOHN P.; & PITTMAN, BETTIE R. Behaviorally oriented programs for learning disabled children. Resources in Education (ERIC), 11(6):95, 1976. 16 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Prices MF \$0.83; HC \$1.67, plus postage. Order No. ED117927.

Behaviorally oriented approaches to the education of learning disabled students are discussed. The advantages of a behaviorally oriented and accountability based program, such as shared knowledge of learning goals and ease of evaluation, as well as the disadvantages, including neglect of the students' affective behavior and undue stress on overt behavior, are noted. The need for behavior modification programs to promote an honest and open relationship between the modifier and those involved in the behavior change process is stressed, and some weaknesses of the traditional "medical model" approach are examined. The importance of B. Bloom's "Mastery Learning" model and the attention research of D. Zeamen and B. House are also discussed.

1545 Play and learn with toys; a bibliography of toys that "teach institutionalized children." Resources in Education (ERIC), 11(7):146, 1976. 28 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED119740.

Educational toys and games useful to a library which serves the MR are described in an annotated bibliography sponsored by the North Dakota State Library Commission, Bismarck, North Dakota. The entries are organized under the headings communication skills, concepts, life skills, motor skills, and sensory skills. Addresses of publishers and manufacturers are provided.

1546 LOVITT, THOMAS C. Applied behavior analysis and learning disabilities. Part II: Specific research recommendations and suggestions for practitioners. *Journal of Learning Disabilities*, 8(8):504-518, 1975.

Selected studies on curriculum using the applied behavior analysis (ABA) system indicate specific and general research topics pertaining to the learning disabled child which should be pursued and suggest strategies for teaching. Research needs include developmental studies of competent readers; studies of comprehension, acquisition, and generalization of reading; studies of word arrangement, generalization, and discrimination in spelling; and research regarding the effects of single techniques, or combinations of techniques, on mathematical performance. Research in the area of written composition may be more important than studies in other curricular areas, and communication research should focus on means of preserving and transferring information other than penmanship. Studies should also ascertain the reinforcing strength of various pupil management components. Thirteen recommendations for practitioners based on ABA are outlined which can be utilized with a variety of behaviors or individuals. (26 refs.)

Experimental Education Unit Child Development and Mental Retardation Center University of Washington Seattle, Washington 98195

1547 COOK, JENNIFER. Easing behaviour problems. Special Education: Forward Trends, 2(1):15-17, 1975.

A 10-week course for special education teachers in the management of behavior problems in the classroom combined lectures with practice in program design. Although the class was open to any qualified teacher, it was designed particularly for teachers in all branches of special education. The 15 participants attended 7 meetings devoted to an exploration of problems faced and a grounding in the use of behavior modification, using mainly case studies. Practical experience entailed individual research projects by each teacher which focused on a particular child or group of children in their own school, took a baseline, and implemented a change procedure. Studies were described by participants in group discussions during the last 3 sessions. Ten teachers each completed a study, with 3 projects aimed at improving academic achievement and 7 concerned with another aspect of classroom behavior. By the end of the course, teachers appeared able to observe, define, and record behavior; to select and use reinforcers; and to analyze and modify their plans where necessary. (12 refs.)

Jordanhill College of Education Glasgow, Scotland

1548 Lloyd, John. The pedagogical orientation: an argument for improving instruction. Journal of Learning Disabilities, 8(2):74-78, 1975.

A pedagogical orientation for special education is proposed which minimizes the role of the etiology of a learning disability; focuses on improved teaching abilities through task analysis methods; and removes the responsibility for failure from the children. To ameliorate and obviate school failures, teachers should utilize techniques of observation and reinforcement, eliminate extraneous and imprecise teaching actions; and carefully analyze the tasks being taught. There is a high probability that exceptional learners will succeed in learning if tasks are broken down into small units. Improved methods of instruction will help effect the teaching of all children.

Oregon Research Institute 1009 Patterson Street Eugene, Oregon 97403

1549 YUDKOVITZ, ELAINE; ROTTERSMAN, JUDY; & LEWISON, NANCY. Modeling for change: a cognitive approach to language therapy. Journal of Learning Disabilities, 8(2):79-88, 1975.

An approach to language therapy with schizophrenic and learning disabled children is based on the Piagetian theory of cognitive change. The model takes into account the development of the conceptual notion upon which the linguistic form is based and the way in which cognitive change is achieved. A therapeutic situation is designed in which children are presented with contrastive forms through a matching task and the therapist models the correct language form. Experiencing the inadequacy of his own language model in a situation characterized by disequilibrium enhances the child's potential of acquiring the conceptual notion and the linguistic form which codes it. Strategies are outlined for helping children to specify referents and learn superlative adjectives. (4 refs.)

Ittleson Center for Child Research 5050 Iselin Avenue Riverdale, New York

1550 COLEMAN, RAYMOND F.; & STRENECKY, BERNARD J. The inter-disciplinary team: a new kind of class-room. Journal of Learning Disabilities, 8(9):551-554, 1975.

An interdisciplinary model has been established in Rochester, New York, to train physicians and graduate students majoring in learning disabilities (LD) while offering direct services to teachers, children with LD and their parents in the context of the school. Pediatric residents and education majors collaborate with public school teachers, psychologists, social workers, and other team members in decision-making about cases, which in turn stimulates an exchange of ideas. Classes in LD are held within the participating public schools, with medical and educational specialists sharing their expertise by teaching each other. The advantages of the program are realized by the participating school districts and the community as well as the pediatric residents and education students who have been trained. The most important facet of the model is its interdisciplinary thrust rather than the number of team members.

School Health Programs
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1551 SENF, GERALD M.; & GROSSMAN, RONALD P. State initiative in learning disabilities: Illinois' Project SCREEN. Report III: Local and state opinion regarding the concept of learning disabilities. Journal of Learning Disabilities, 8(9):587-596, 1975.

An in-depth survey of 5 special education cooperatives in Illinois and an attitude survey of 25 state learning disabilities (LD) coordinators across the nation examined the concept of LD in relation to local and state procedures and laws affecting the delivery of service. Illinois specialists reported morale problems, misgivings about procedures used by some auxiliary professionals, and skepticism about the validity of the concept of LD in general. Services were discussed in terms of resource rooms and mainstreaming, and a paucity of programs for students above primary grades was noted. Nationwide interviews reported concerns about funding, the breadth of the definition of LD, and parent pressures. The failure of regular education to be responsive to individualized needs of children was an area of shared concern. (6 refs.)

Psychology Department University of Illinois Chicago Circle Campus Chicago, Illinois 60680 1552 GOTTESMAN, RUTH; BELMONT, IRA; & KAMINER, RUTH. Admission and follow-up status of reading disabled children referred to a medical clinic. *Journal* of Learning Disabilities, 8(10):642-650, 1975.

The course of reaching achievement over a 3- to 5-year period was examined in 58 reading disabled children who were referred to a medical clinic. After the initial workup, recommendations were made for each child regarding remedial efforts. Thirty-eight were placed in special classes, and 20 remained in regular classes. Twenty-five of the children received remedial tutoring in the clinic twice a week. At follow-up, the children showed minimal gains in reading as a group, remaining among the poorest readers for age (12 to 18 years old). However, one-third of the children (mainly the older ones) slowly achieved a minimal degree of functional reading. Children who ranked highest on admission tended to show the greatest reduction in reading level on follow-up, while the poorest readers showed no appreciable change after intervention. No significant relationships were found among intelligence, reading status or medical findings. A small group (12 percent) of language impaired children made significantly less progress over the years than the rest of the group. (20 refs.)

Kennedy Center for Research in Human Development and Mental Retardation Albert Einstein College of Medicine Yeshiva University 1410 Pelham Parkway South Bronx, New York 10461

1553 MAYER, C. LAMAR; & SCHEFFELIN, MARGARET. State-wide planning for special education in California. *Journal of Learning Disabilities*, 8(4):238-242, 1975.

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A master plan for special education throughout California was implemented in January 1974, after almost 2 years of field evaluation and revision. The plan is based on the concept that public education must seek out individuals with special needs and provide them with educational opportunities commensurate with abilities. Elements of the plan include 1) the identification of persons and/or agencies responsible for implementing quality programs; 2) development of a system which deemphasizes categorization; 3) establishment of

program components to serve the needs of all exceptional individuals; 4) development of an evaluation and information system; 5) adoption of an appropriate financial model for funding special education; and 6) identification of personnel and models for staff development and training. Legislation which will implement the master plan on a pilot basis has been passed and full program operation is anticipated by 1980; systematic updating and revision of the plan is anticipated. (3 refs.)

California State University 5151 State University Drive Los Angeles, California 90032

1554 SENF, GERALD M.; LUICK, ANTHONY H.; & SAWYER, BEVERLY P. State initiative in learning disabilities: Illinois' Project SCREEN, Report IV.: Service materials and content monographs. Journal of Learning Disabilities, 8(10):613-623, 1975.

A series of resource documents is described which was produced under the auspicies of Project SCREEN, a statewise learning disability program in Illinois. Each monograph was designed for the use of various professionals working with learning disabilities. Among the documents are 1) a scholarly review of administrative arrangements commonly employed by schools in providing service to the learning disabled; 2) a listing of information sources and references to written manuscripts relevant to learning disabilities; 3) a series of abstracts of tests potentially useful in screening and diagnosis of learning disabled children or in the evaluation of programs for these children; 4) analyses of test procedures useful in learning disability research and practice; and 5) theoretical monographs on linguistic development and curriculum planning in mathematics for the learning disabled. (27 refs.)

Project SCREEN Psychology Department University of Illinois Chicago Circle Campus Chicago, Illinois 60680

1555 GILLESPIE, PATRICIA H.; MILLER, TED L.; & FIELDER, VIRGINIA DODGE. Legislative definitions of learning

disabilities: roadblocks to effective service. Journal of Learning Disabilities, 8(10):660-666, 1975.

A review of current legislation affecting learning disabled children reflects professional differences of opinion about the identification, assessment, and placement of children with learning problems. Although two-thirds of the states had legislated some service to the learning disabled by 1969, the laws tend to reinforce the ambiguity that exists in the field about what constitutes a learning disability and tend to specify procedures which mandate the identification and labeling of children before special services can be provided. Framers of legislation designed to facilitate the education of children with learning disorders should be concerned with the operational requirements of meeting specific educational needs rather than categorizing children according to definitions. Legislation dealing with the special needs of children should concentrate on establishing mechanisms for determining individualized educational plans based on behavioral manifestations of problems and other specific variables of each situation. (8 refs.)

Center for Innovation in Teaching the Handicapped School of Education Indiana University 2805 E. 10th Street Bloomington, Indiana 47401

1556 BRAY, NANCI MORELAND; & *ESTES, ROBERT E. A comparison of the PIAT, CAT, and WRAT scores and Teacher Ratings for learning disabled children. Journal of Learning Disabilities, 8(8):519-523, 1975.

Although the Peabody Individual Achievement Test (PIAT) was designed and standardized for use with normal children, it is also applicable to learning disabled children. A comparison of the PIAT, the California Achievement Test (CAT), the Wide Range Achievement Test (WRAT), and Teacher Ratings of academic performance supported the concurrent validity of the PIAT with learning disabled children. Moderate to high Pearson product-moment correlation coefficients favored the PIAT. Comparable subtest mean grade placement scores were generally equivalent, except for the PIAT Reading Recognition and WRAT

Reading scores, which were lower than the other measures. The PIAT is no more biased or inaccurate than other academic assessment measures used in special education. (7 refs.)

*Special Education Program University of Texas at Dallas Box 688 Richardson, Texas 75080

1557 SENF, GERALD M.; & SUSHINSKY, LEONARD W. State initiative in learning disabilities: Illinois Project SCREEN. Report II: Definition and Illinois Practice. Journal of Learning Disabilities, 8(8):524-533, 1975.

A theoretical monograph on the definition of learning disabilities (LD) and a survey of special education administrators in Illinois cast doubt on the usefulness of the term "learning disabilities" and suggested that the focus must shift from categorizing the manifestations of school problems to the delivery of appropriate services to children with learning difficulties. Educational concepts based on absolute achievement orientation and reliance on normative thinking should be replaced by concepts based on the uniqueness of each child and the role of the school in fostering the maximization of each child's potential. Interviews with special education cooperative directors indicated that: 1) the teacher usually refers the potential LD child to specialists; 2) a joint area cooperative is a worthwhile model for delivering services; and 3) the use of resource rooms is a satisfactory approach to teaching LD children. Administrators also expressed dissatisfaction with the training of teachers of the LD and reacted favorably to parent groups. (8 refs.)

Psychology Department University of Illinois Chicago Circle Campus Chicago, Illinois 60680

1558 HUGHES, ROBERT; & JACKSON, STEPHEN. Special education in Scotland. Special Education: Forward Trends, 2(2):8-11, 1975.

An interview with Robert Hughes, Under Secretary of State for Scotland, indicates some progress in the training of teachers of the handicapped

since September 1971. Legislation has been passed providing for education of MR children by registered and qualified children, and the number of registered teachers in occupational centers has increased from 5 to 17. Plans for increasing the supply of teachers for MRs include encouraging local authorities to recruit teachers. There are no plans for instituting a degree course in special education or for offering advanced courses in special education. The integration of handicapped and nonhandicapped children is being encouraged, and no special units are provided for autistic or dyslexic categories of children. The most urgent needs in the education of handicapped children are help for maladjusted children in day units or units in school and expanded programs for preschool children. Although the education of children in occupation centers is important, there are inadequacies in training and recruitment of staff.

1559 KIRK, SAMUEL A.; BATEMAN, BARBARA; MASLAND, RICHARD; HAMMILL, DONALD; STROTHER, CHARLES; KEOGH, BARBARA; & McLEOD, JOHN. LD leaders strike back at distorted reporting. Journal of Learning Disabilities, 8(5):316-325, 1975.

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A New York Times article by Diane Divoky which is critical of the dramatic rise in the number of children identified as learning disabled in the face of ambiguities about the definition and treatment of the syndrome is reprinted, and responses of 7 professionals are presented. Replies are addressed to such specific issues as the definition of learning disabilities, the use of a medical model for learning disabled children, labeling children as learning disabled as a defense for the school's failure to teach them, and the use of learning disabilities classes as dumping grounds. Some of the responses agree that these issues merit consideration but question the implications or conclusions which are drawn in the article.

1560 MCCOY, LOIS E. Braille, a language for severe dyslexics. *Journal of Learning Disabilities*, 8(5):288-292, 1975.

The apparent success of Braille as a channel of information for a 15-year-old girl who could neither read nor write suggests that this approach may be feasible for teaching a method of communication to the severely dyslexic. Four

months after the girl began instruction in Braille she exceeded her highest previous reading achievement. Within a year she began fourth grade studies in Braille, using this method in conjunction with Talking Books and tape-recorded information. A difficult challenge in program planning for this student was the unavailability of Braille materials which combine high interest subjects with low vocabulary levels. The techniques suggested are applicable on a one-to-one tutorial basis but are not suggested for group remediation. Many psychosocial problems observed in adolescents with learning disabilities could be alleviated by de-emphasizing the written communication requirements which eliminate most of these students from academic classes. (5 refs.)

Institute for Behavioral Genetics University of Colorado Boulder, Colorado 80302

1561 BERRILL, RENEE. Mathematics and slow learners. Special Education: Forward Trends, 2(2):17-19, 1975.

Three groups of slow learning students in special schools gained an improved understanding of mathematical concepts through a series of tape recordings which were used with earphones. Material included on the tapes dealt with the concept of number, the arrangement of similar shapes in order, and the bonds of addition and subtraction. Children in a wide age and ability range learned elementary facts about numbers and shapes as well as mathematical concepts. The taped method and the use of a range of materials were accepted by all students, stimulated motivation, and involved the child in the learning process on both emotional and practical levels. The method, which is based on individualization and allows for low reading ability, can be used in a regular school to help slow learners.

School of Education Newcastle University Newcastle, England

1562 NICHOLLS, ROBERT. Merging their education. Special Education: Forward Trends, 2(2):22-24, 1975.

Six years of close cooperation and joint activities culminated in the merger of an English school for

mildly handicapped children and a school for severely handicapped children. One school became a primary school for handicapped children of varying types (2 to 10 years old) with an infant assessment unit and an all-age multihandicapped unit, while the second school was designed for older children (10 through adolescence), with a special class for learning-disabled children. Success of both schools (after modification which grouped older children according to severity of handicap for teaching purposes only) is attributed to individualized learning programs for each child; beginning education as early as possible; careful planning and defining of specific objectives; and positive motivation of children. In spite of some problems, sufficient progress has been made to support the value of integrated programs. (4 refs.)

Tesdale House School Abingdon, Oxfordshire, England

1563 SANDERS, LEON; & WATSON, PETER. Pioneering at Park Lane. Special Education: Forward Trends, 2(4):14-16, 1975.

A full-time course for MR students aged 15 and over has been initiated at a college concerned with providing an education in social and general studies. Seventy-six students (average MA of 71/2 years) are enrolled in the highly structured and individualized programs offered for MR adolescents and young adults. Curricula for each student are developed in keeping with CA vet realistically enough to help the student in areas where success seems possible for him. Specific teaching, including short periods of tutoring and guidance and speech therapy, is offered daily within the framework of general activities. Efforts are made to help students become familiar with the neighborhood recreational facilities and to use the amenities of the college. MRs mix with regular college students in dining facilities and other settings. One student attended a secretarial class and adjusted well. Assessment of the first 11 students indicated significant gains in social maturity after 1 year. Progress was also made on self-help, occupation, and communication. Program expansion will include a link course with an adult training center. (4 refs.)

Department of Adult Education Leeds University Leeds, England 1564 CHALK, JOHN. Sanctuary units in primary schools. Special Education: Forward Trends, 2(4):18-20, 1975.

The establishment of sanctuary type units for part-time utilization by disturbed or disruptive pupils in 4 London primary schools resulted in benefits to the problem students, the remainder of the class, and the staff. Students were withdrawn from regular classes on a flexible basis and exposed to basic educational activities as well as attention to special needs. Major benefits included: 1) improvement in class atmosphere; 2) better containment of disturbing children; 3) more speedy participation in general classroom activities by withdrawn pupils; and 4) easier transitions from infant schools to junior schools. Teachers in sanctuary units worked closely with other staff. lending support and practical help to young and inexperienced teachers. Children enrolled in sanctuary units showed a mean increase of 2.1 points on adjustment profiles. Adequate staffing of sanctuary units is important. Such units will be successful only if their policies are clearly outlined and coordinated with the rest of the staff, and if they benefit the school as well as the disturbed pupils.

Oxford Gardens Junior School London, England

1565 NICOL, EDNA; & WOODS, ELIZABETH. Introducing the Charlton Tutor. Special Education: Forward Trends, 2(1):13-14, 1975.

The Charlton Tutor, a teaching aid which requires only one movement for its operation, is enabling children with severe motor handicaps to work independently in class. They match shapes, words and pictures, and questions and answers (which are on cards within a rotating drum) on the window of a machine housed in a simple box. The 2 controls may take any form and be operated by any part of the body. A reading program is being developed for use with the Charlton Tutor. The popularity of the machine with children other than the severely motor handicapped suggested that it may be of value to slow learning children. It can be built by a teacher with an elementary knowledge of electronics at a comparatively low cost. (1 ref.)

Inner London Education Authority Resource Centre for Motor and Associated Communication Handicaps London, England 1566 BLEIL, GORDON B. Evaluating educational materials. *Journal of Learning Disabilities*, 8(1):12-19, 1975.

A system for evaluating educational materials is outlined in the light of the special educator's increased role as information manager and disseminator of materials. Basic to any evaluation is a clear statement of desired results. Subjective evaluation of materials entails attention to common sense, honesty, congruence between materials and classroom life, editorial control, authorship, and successful use in similar circumstances. Pitfalls include promise of magic solutions, diagnostic labels, jargon, and grade designations. Objective evaluation is a series of discriminations of observable and measurable factors based on classroom objectives. Guidelines for specific appraisal tools should be based on teacher needs, student needs, and good value. The willingness to use materials in the manner in which they were prepared is a key question in assessment. Criteria for material selection apply to evaluating committees as well as to individual educators.

Edmark Associates 13249 Northup Way Bellevue, Washington 98005

1567 KENOWITZ, LEONARD A.; SCHIPPER, WILLIAM V.; & WILSON, WILLIAM C. NACH and NASDSE to meet; arts for the handicapped. Education and Training of the Mentally Retarded, 10(3):215-218, 1975.

A joint meeting of the National Advisory Committee of the Handicapped NACH and the National Association of State Directors of Special Education (NASDSE) will be held in October 1975 to develop recommendations concerning the improvement of services to the handicapped which will be forwarded to the U.S. Commissioner of Education. The commissioner must respond in writing to recommendations. During 1973 and 1974, NACH recommendations focused on the rights of handicapped people, including the concept of determination, and progress has been made toward implementing many of the recommendations. In 1975 NACH proposed an affirmative action policy to ensure that handicapped individuals are included in policy making bodies at federal, state, and local levels. Another development affecting education of handicapped children is the formation of the National Committee on Arts for the Handicapped. The Committee's goal is to increase substantially the number of MR and handicapped students served by art programs in public schools over the next 5 years.

Severely Handicapped Project Experimental Education Unit University of Washington Eugene, Oregon

1568 KENOWITZ, LEONARD A.; SCHIPPER, WILLIAM V.; & WILSON, WILLIAM C. Federal special education legislation what states may expect in the near future. Education and Training of the Mentally Retarded, 10(3):218-219, 1975.

Legislation enacted in the Ninety-third Congress (1974) increased the federal role in the education of handicapped children and changed the assistance to states allocation system from a project grant basis to an entitlement program. Other newly enacted bills specify grievance procedures for parents and public school agencies and require states to ensure the inclusion of all handicapped children in an appropriate public school program by a target date. Pending legislation relating to education of the handicapped proposes that compliance mechanisms be built into federal law to ensure that adequate educational services are being provided by state and local education agencies receiving federal funds. In the next few years Congress may provide a financial incentive to state and local education agencies providing preschool programs for the handicapped; may specify an individualized type of education for the handicapped in federally funded programs; and may require that state education agencies assume more responsibilities for inservice education of special education teachers.

Severely Handicapped Project Experimental Education Unit University of Washington Seattle, Washington

1569 SOEFFING, MARYLANE Y. Perspectives on due process -- parent, administrator and policy specialists exchange views. Education and Training of the Mentally Retarded, 10(3):204-214, 1975.

The effects and implications of due process procedures protecting the educational rights of handicapped children are discussed by the mother of an autistic child (Jane Salzano), a special education teacher (Richard Johnson), and a policy specialist (Alan Abeson). Court decisions and legislation based on the doctrine of due process will focus attention on the best interests of the individual child when educational decisions are made, improve decision making about child placement, help administrators garner more resources for special education, and foster more parent involvement and better communication between parents and school personnel. The requirement that handicapped children be educated in the least restrictive alternative educational setting will promote flexibility within school systems. Laws protecting the rights of handicapped children in school settings have broad implications for the rights of the handicapped in noneducational settings as well as the potential for promoting greater understanding and acceptance of the handicapped by nonhandicapped children.

1920 Association Drive Reston, Virginia 22091

1570 SAILOR, WAYNE; GUESS, DOUG; & LAVIS, LEONARD. Training teachers for education of the severely handicapped. Education and Training of the Mentally Retarded, 10(3):201-203, 1975.

A service model for training teachers of SMR and PMR individuals (some of whom have orthopedic, perceptual, and/or emotional handicaps) includes community-based as well as residential school settings, provides a year-round practicum performance setting for competency-based training, and allows assessment of competencies in tightly controlled research designs in residential settings which can be generalized for community-based settings. Reading, numerical, graphic, communicative, survival, and community skills are among the competencies to be acquired by new teachers of the severely handicapped. The model places emphasis on the interactive and interdisciplinary efforts contributed by the various agencies involved. The training model will be available to other states on request through workshops and on-site faculty institutes. (10 refs.)

Personnel Training Program Education of the Severely Handicapped Kansas Neurological Institute Lawrence, Kansas 1571 STAMM, JOHN M. A general model for the design of a competency-based special education professional preparation program. Education and Training of the Mentally Retarded, 10(3)196-200, 1975.

A general model for developing a professional preparation program for special educators is being used to gradually implement a competency-based instructional program at the University of Oregon. The program is based on the assumptions that teaching is an applied behavioral science; teaching behaviors are amenable to systematic analysis, measurement, and modification; the master's level special educator should be an educational leader and change agent; preparation of special teachers consists of establishing repertoires of analytical skills and the opportunities to practice skills; the prospective teacher will meet program objectives through sequenced instruction modules; and the program's success is determined in measurable outcomes. The broad parameters of the model function as guides to the development of more humanistic and efficient special education programs. The aim of the program is to prepare teachers who can individualize programs, who will be more accountable, and who can promote as well as adapt to change. (7 refs.)

South Central Learning Resource Center Anchorage, Alaska

1572 SHEPERD, GEORGE. Models for preparation programs. Education and Training of the Mentally Retarded, 10(3):193-196, 1975.

Growing concern with decision-making processes used within the establishment has promoted the use of training models systems by special educators. A model is a "representational system for structuring and predicting relationships between symbolic and real events." Present model builders use various means of describing critical ingredients in operational models for teacher preparation as well as a variety of logical sequential steps. Mitzel describes presage, process, and product parameters of program models; Glaser outlines 4 component phases of instructional systems; and Smith uses a task analysis approach in predicting what teaching will be like in the future. Although models are useful, it is important

to substantiate them through actual investigations and not to get so tied to a particular model that humanistic aspects of education are lost. (5 refs.)

College of Education University of Oregon Eugene, Oregon

1573 TOLLIVER, BILLIE. Discrimination against minority groups in special education. Education and Training of the Mentally Retarded, 10(3):188-192, 1975.

Cultural conflicts experienced by many minority group students in school (through books and materials, language arts, and curricular content) are also reflected in intelligence quotient (IQ) tests and may ultimately result in the child's placement in special classes for MRs. Methodological problems are involved in attempts to develop culture-free tests or to modify the language or administration procedures of standardized tests. A proposal to develop IQ tests for each of our society's major cultural groups poses problems in terms of creation and standardization. An alternative way of assessing children more fairly uses both an IQ test and a measure of adaptive behavior based on pluralistic norms. Ss would be classified as MR if they scored in the lowest 3 percent of their sociocultural group on both measures. Programs and materials adapted to each child's style of learning offer the opportunity for development in a manner which is relevant to individual life styles. (13 refs.)

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Department of Therapeutic Recreation University of North Carolina Chapel Hill, North Carolina

1574 KIDD, JOHN W. Accountability in public school M. R. programs. Education and Training of the Mentally Retarded, 10(3):170-173, 1975.

Two approaches to accountability in special education programs have been used in St. Louis County, Missouri: 1) an annual telephone follow-up survey of graduates from the past 10 users; and 2) a periodic questionnaire sent to parents of all TMR and EMR pupils to determine the general state of satisfaction with the program, specific items of approval or disapproval, and/or

suggested program modifications. Parents have the option of returning questionnaires anonymously and at no expense. In a recent survey of parents with students enrolled in special programs during the preceding year, return rate for parents of TMRs was 33 percent, with 85 percent of the respondents rating the program "great" or "good." Return rate for parents of EMRs was 18 percent; favorable program ratings accounted for 93 percent. Responses relate to a system where 90 percent of TMRs and EMRs are in special schools in spite of the trend toward mainstreaming.

Department for the Educable Mentally Retarded Special School District St. Louis County, Missouri

1575 LANCE, WAYNE D. Instructional materials for the mentally retarded: a review of selected literature. Education and Training of the Mentally Retarded, 10(3):161-166, 1975.

A review of literature on the status of teaching materials for the MR indicates that most materials have been generated at the local level in response to perceived needs of educators or by a few comprehensive efforts in certain curricular areas. Many lists of selected materials which are designed or adapted for use with MRs are available, and area learning centers, special projects, and national systems have been developed to identify, develop, test, describe, and disseminate appropriate materials. Special materials have been developed to facilitate the instruction of language and reading, numbers and arithmetic, science, creative arts, and socialization, prevocational, and vocational skills. A coordinated effort among commercial producers, instructional technologists, and special educators to produce, test, and deliver appropriate teaching materials for MR students will follow a national needs assessment. (51 refs.)

Northwest Area Learning Resource Center University of Oregon Eugene, Oregon

1576 SENGSTOCK, WAYNE L.; VERGASON, GLEN A.; & SULLIVAN, MARGARET M. Considerations and issues in a drug abuse program for the mentally retarded. Education and Training of the Mentally Retarded, 10(3):138-143, 1975.

The need for drug abuse programs for the MR is underscored by studies which indicate that a large proportion of MRs have sociocultural and motivational characteristics apt to be associated with drug users. Crash drug abuse programs may stimulate curiosity to experiment with drugs, and specific drug education programs should not be presented in every special class. Instruction in the development of good health habits, social responsibility, and decision making should be the core of a drug education program for MRs. In communities or specific schools where drug use is prevalent and temptations and social pressures are strong, a drug education program is necessary to convey drug information in terms of medical, moral, social, and legal terms which can be understood from a personal standpoint. To be effective in controlling the abuse of drugs, the teacher of MRs should approach drug education in a knowledgeable, factual, calm, open, and professional manner. (5 refs.)

Special Education Department George State University Atlanta, Georgia

1577 WAMBOLD, CLARK L.; & HAYDEN, CATHY. Training cognitive strategies in the mildly retarded: an applied approach. Education and Training of the Mentally Retarded, 10(3):132-137, 1975.

Effects of mediation strategies on paired associate (P-A) learning were compared in 24 EMR students (CA 11 to 14) in an attempt to translate basic research findings into classroom methodology. Matched groups of 6 subjects each were instructed in 1 of these strategies prior to the administration of a P-A task consisting of 6 pairs of pictures. Ss who received instruction improved their own performances over baseline levels and performed significantly better than controls who received no instruction regarding strategy. None of the instructor-supplied strategies was significantly more effective than the other in improving performance, and there was little evidence that students retained benefits at 3 weeks post-test. Additional studies using longer lists might demonstrate that 1 strategy is more effective than the others in improving P-A performance. (17 refs.)

Department of Studies in Behavioral Disabilities

University of Wisconsin-Madison Waisman Center on Mental Retardation and Human Development 2605 Marsh Lane Madison, Wisconsin 53706

1578 LAWRENCE, ELIZABETH A.; & WINSCHEL, JAMES F. Locus of control: implications for special education. Exceptional Children, 41(7):483-490, 1975.

A selected group of studies on locus of control in mildly MR children suggests that internality in locus of control must become a conscious goal in the education of MR children. The creation of an environment conducive to the promotion of internality must begin with a setting with opportunities for success and failure. Success and failure conditions differentially affect the performance of internally and externally oriented subjects, and differential performance also depends on the perception of a task as dependent on either skill or chance. Development of internality is postulated as progressing in 5 developmental stages, with a disproportionate number of MRs operating with belief systems common in early stages of development. An understanding of locus of control and its relation to achievement might facilitate successful placement of mildly MR children in regular classrooms. (35 refs.)

Department of Special Education Western Michigan University Kalamazoo, Michigan

1579 BERDINE, WILLIAM H.; KNAPP, DEBORAH S.; TAWNEY, JAMES W.; & MARTINSON, MELTON C. Community action teacher training in special education. Exceptional Children, 41(7):495-496, 1975.

The practicum component of a required special education course on characteristics of MR includes an array of student initiated projects in community based programs which are embodied in the Student Town Action Resources Team Project (START). Students participate in START on a contract basis and are divided into small teams to work on problems in a sequenced manner from project identification through evaluation. Present project areas include work with MRs and

disadvantaged and behaviorally disordered children and adults through recreational and social awareness programs. Program objectives are to reduce classroom based lecture oriented training; to provide for off-campus experience in socially relevant areas; to provide interdisciplinary experience in program development; and to increase the probability that program graduates will perform as socially aware and community-oriented instructional specialists. (1 ref.)

Certification Program in Mental Retardation Department of Special Education University of Kentucky Lexington, Kentucky 40506

1580 ABBOTT, JOHN C.; & *SABATINO, DAVID A. Teacher-mom intervention with academic high risk preschool children. Exceptional Children, 41(4):267-268, 1975.

Following 3 one-hour preintervention parent sessions, 25 mothers of preschool academic high-risk students worked with their children 20 minutes daily using the Frostig Program for the Development of Visual Perception. Materials were distributed during a continuous 10-week inservice training program where parent-child interaction was also discussed. Parents reported a mean of 525 minutes working on the Frostig program, with subjects who spent more than the mean amount of time in intervention activities effecting significantly larger gains than those who spent less than the mean amount of time. Gains in children reported by parents included more confidence, better listening skills and direction following, and preparation for homework in elementary school. Twenty-one of the parents stated that they would be very willing to participate in a similar program in the future. (3 refs.)

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*207 Cedar Building University Park, Pennsylvania 16802

1581 CEGELKA, PATRICIA THOMAS; & TAWNEY, JAMES W. Decreasing the discrepancy: a case study in teacher reeducation. Exceptional Children, 41(4):268-269, 1975.

Thirteen experienced special education teachers participated in a project which attempted to initiate and document the effects of an efficient,

effective, and economical retraining strategy. The basic course content included adoption of 4 instructional modules reflecting the main sources of divergence between training program requirements and field practices. All of the modules contained criterion referenced task requirements, and 3 included both pretests and posttests. The majority of teachers incorporated newly learned competencies in their classrooms and demonstrated high levels of criterion performance on critical modules of the preservice training program. Supervisors increased the percentage of positive interactions with children, and clarification of program objectives and practicum requirements ensued. Teacher retraining activities can be conducted concurrently with program developments, and congruence between competencies of supervisors and program graduates can be increased by planning and reinforcement contingencies. (3 refs.)

Department of Special Education University of Kentucky Lexington, Kentucky 40506

1582 PREHM, HERBERT J. A competency based approach to the preparation of teacher educators. Education and Training of the Mentally Retarded, 10(4):295-298, 1975.

A competency based approach to the preparation of teacher educators in special education is based on the premise that program goals should be operationalized and assumes that teacher educators can be prepared systematically. Input and output components constrain the preparation process; process elements result in specifiable outcomes which are achieved at various phases of the process; and the evaluation component provides data which can be used to assess the degree to which program goals have been attained. The problems associated with a competency based model relate to the overly rapid redesign of existing programs; the degree of specificity needed in stating program objectives; and the determination of where, when, and how to begin program modifications. Doctoral level preparation of teacher educators should follow a competency oriented model which should foster the use of an individualized experience-oriented approach to developing outcome objectives. (2 refs.)

Department of Special Education Division of Teacher Education University of Oregon Eugene, Oregon

1583 DIXON, CARMEN C. What can a speech therapist do in a TMR program? Education and Training of the Mentally Retarded, 10(4):290-291, 1975.

The speech therapist has a valuable role in TMR programs in assessing and treating individual children, doing speech activities with the total class, helping the teacher choose and secure materials that will assist in the total improvement of speech, language, and listening, and working with parents through individual conferences, workshops, or other in-service mechanisms. On the individual basis, each child should be seen at least once a year for a communication evaluation of receptive language, sequential memory and expressive speech. The best prognosis for therapy is indicated by understanding vocabulary of at least a 21/2 year level; auditory sequential memory of at least 3 items; evidence that the child can hear, aided or unaided; and at least one word expressive speech. Certain problems revealed by the screening should be followed-up regardless of screening performance, including medical referral for voice, voice quality, malocclusion, breath control, and evidence of hearing loss. The goal of direct therapy is functional and intelligible speech. (1 ref.)

Speech and Hearing Consultant Chula Vista City Schools P.O. Box 907 Chula Vista, California 92012

1584 CHILDS, RONALD E. A second look at resource room instruction by a resource teacher. Education and Training of the Mentally Retarded, 10(4):288-289, 1975.

Resource room instruction for mildly handicapped children in Georgia has increased in the light of the debate concerning the efficacy of self-contained versus special classrooms, lack of sufficient plant facilities to service handicapped children, and budgetary limitations. Although the resource room may be the best plan for helping mildly handicapped children attain academic and occupational success, its efficacy is hindered by the regular classroom teacher's lack of special

education or experience in dealing with exceptional children and the special education teacher's lack of preparation for coordinating work with regular teachers. Although the child is instructed at his own level in the resource room, he frequently receives no special attention or consideration when he returns to the regular class. If the resource room is to be effective, a working communication system between special education teachers and regular classroom teachers must be developed and implemented.

Department of Special Education Valdosta State College Valdosta, Georgia

1585 LLOYD, CAROL. Resources for the educator of severely or multiply handicapped. Education and Training of the Mentally Retarded, 10(4):303-306, 1975.

Twenty-one annotated references drawn from 3 current bibliographies of the Council for Exceptional Children are offered in an attempt to make new information pertaining to the low functioning and severely handicapped child more accessible to the practitioner. Materials include curriculum guides, directories, parent guides, information on language instruction and teaching methods, materials and technology, bibliographies, and other reference materials. Specific methods, materials, and approaches are included which deal with all major areas of child development. Some documents reflect the growing realization that the parents have the central role in the education of severely handicapped children. Many of the documents are available from the ERIC Document Reproduction Service, P.O. Box 190, Arlington, Virginia 22210. (21 refs.)

1920 Association Drive Reston, Virginia, 22091

DEJUNG, JOHN; & SPENCE, JOYCE. Decision support model for program evaluation. Education and Training of the Mentally Retarded, 10(4)299-302, 1975.

The Department of Social Education at the University of Oregon uses a model for in-house program evaluation to describe causal relationships in nonexperimental settings as a basis for decision making about program activities. Components

embraced by the model include 1) program definition; 2) definition of decision points in the program; 3) definition of the decision process for each point; 4) identification of relevant input data for each decision point; 5) obtaining samples of input; 6) delivering relevant input to decision making; 7) assessing the usefulness of the input for decision making; and 8) recycling steps 4 through 7. Although a number of semiindependent studies bearing on the evaluation of the department's program have been carried out, continued piecemeal studies are of dubious value without a unifying plan for program evaluation and a total integrative design. (1 ref.)

Department of Special Education University of Oregon Eugene, Oregon

1587 CHILDS, RONALD E. Fifteen basic components for an effective instructional program for the mentally retarded. Education and Training of the Mentally Retarded, 10(4):285-288, 1975.

Basic components of an effective instructional program for the MR include initial and ongoing assessment of instructional levels of children in all areas of instruction; appropriate programmed instruction; repetitious presentation of materials to suit the individual child; reinforcement in overall learning behavior; determination of the most appropriate instructional media for each child; a structured, efficient, and well supervised program; a program designed to foster success and confidence; the development of appropriate classroom behaviors and actions consistent with expectations outside class; the utilization of concrete objects and tangible situations; and emphasis on materials with practical value in the everyday world. It is also necessary to allow children to progress at their own rates; to present a logically sequenced program; and to explicitly present and define details in information. Legal regulations and procedures outlined for special programs should be followed, and stringent evaluation procedures should be used.

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Department of Special Education Valdosta State College Valdosta, Georgia 1588 KIDD, JOHN W. A sample initial letter from the school (or school district) to the parents of a mentally retarded child. Education and Training of the Mentally Retarded, 10(4):284-285, 1975.

In a sample initial letter from the school to parents of an MR child, guidelines are offered to help the parent work more effectively with the child from a very early age. Habits and traits which the parent can help the handicapped child develop include completion of chores, cooperation with other people, cautiousness, accuracy and consistency, dependability, emotional control, self-correction, accepting authority, sociability, good group participation, good hygiene, effective self-expression, good coordination, and good judgment. The parent can also help the child acquire the skills necessary for telling time, making change, using the telephone, using measurement tools, doing simple cleaning, using simple hand tools, and doing simple sewing. Parent and teacher cooperation can help the parent guide the child toward these objectives without pushing him beyond his abilities.

Dept. for the Educable Mentally Retarded Special School District of St. Louis County St. Louis, Missouri

1589 POLLOWAY, EDWARD A.; & SNELL, MARTHA E. Efficacy revisited. Education and Training of the Mentally Retarded, 10(4):276-282, 1975.

A review of the major journals dealing with MR indicates a dearth of findings regarding the efficacy of mainstreaming. Few studies have attempted to compare the academic achievement of regular class EMRs to special class EMRs, many methodological problems are associated with these efforts, and no clear conclusions are evident. Investigations into personal and social factors have been more plentiful, with studies on attitudes toward and social acceptance of MRs, self-concept and personal attitudes of the MR, and behavioral comparisons of EMRs in various placements. There is a trend toward investigating isolated variables related to efficacy rather than global solutions, but a multitude of untested alternative explanations for results tends to cloud findings. Labeling has not been shown to be inherently damaging, but it can be used as a tool to abuse placement procedures. The choice of special versus regular placement for EMRs may be a false dichotomy; a model using partial segregation may be the optimal condition for social integration. (44 refs.)

Department of Special Education School of Education University of Virginia Charlottesville, Virginia

1590 LAVELY, CAROLYN; LOWE, A. J.; & FOLLMAN, JOHN. Actual reading levels of EMR materials. Education and Training of the Mentally Retarded, 10(4):271-275, 1975.

Instructional materials commercially designed specifically for EMRs were analyzed to determine if publishers' designated grade level placements were accurate and whether materials designated as sequential in level progressed from easy to difficult. The Spache Readability Formula was used to assess primary level materials (grades 1, 2, and 3), and the Dale-Chall Formula for Predicting Readability was used for materials designated as grades 4, 5, and 6. Analysis of random samples of approximately 100 words from each of 57 materials indicated that special materials were not generally accurately assessed for grade levels. All the materials analyzed had mean grade levels different from the publishers' mean placements. Publishers' placements were generally lower than Spache or Dale-Chall placements. Gradation patterns showed no particular sequence in 48 of the materials. Most materials had an excessive vocabulary burden for EMRs. (16 refs.)

SLD Program College of Education University of South Florida Tampa, Florida

1591 MILLS, SHERRY RAE. Band for the trainable child. Education and Training of the Mentally Retarded, 10(4):268-270, 1975.

Instrumental musical training can have emotional, academic and physical benefits for severely handicapped children. Beginning music programs were opened to TMR and physically handicapped children in a rehabilitation center. Fifty-eight

children (CA 7 to 15) enrolled in classes on recorder, piano, chord organ, guitar, accordian, clarinet, or drums, with instruction geared to the center's philosophy of prescriptive teaching. Instructional methods and materials were devised which are appropriate for students with physical and mental limitations and complete enough to be used at home with the aid of musically inexperienced parents. By the end of a year, all students did some playing and knew the fingering for several notes. Four of the older children were able to play and chord several tunes, and 2 were able to read notes and count rhythm.

Rocky Mountain Rehabilitation Center Colorado Springs, Colorado

1592 WALDRON, FAITH. Developing techniques to facilitate instruction-following behaviors in a classroom for mentally retarded students. Education and Training of the Mentally Retarded, 10(4)262-267, 1975.

The effectiveness of 3 different conditions intended to maintain positive instruction-following behaviors and to minimize inappropriate off-task behaviors was evaluated in 6 MR students being prepared for entrance to public school special education classes. Data recorded by 2 observers indicated that a combination of verbal praise, nonverbal support by tutors (a pat on the back), and token reinforcement was more effective in increasing on-task behavior and reducing inappropriate behavior than verbal praise by the teacher or praise combined with pats on the back. Observed behaviors seemed to change from the very inception of the condition where tokens were used. A comparison of total instruction-following behavior for the whole class throughout the study shows an increase from the initial base rate to the final session, suggesting that generalization of behavior elicited by tokens and the tutors may have occurred. (2 refs.)

Richmond County Board of Education Psychological Services Augusta, Georgia

1593 EDGAR, EUGENE; SULZBACHER, STEPHEN; SWIFT, PATRICIA E.; HARPER, CECELIA TAGUE; BAKER, STEVEN; & ALEXANDER, BRUCE. An alternative to words and scores: the Washington State Cooperative Curriculum Project (WSCCP). Education and Training of the Mentally Retarded, 10(4):259-261, 1975

The Washington State Cooperative Curriculum Project (WSCCP) is a functional assessment system for exceptional children which presents an orderly sequence of precisely defined skills as a basis for individual student programming and more facile communication of pupil progress data among teachers and parents. A catalog of student performances in 16 instructional areas is presented in Objective Statements, while Criteria Tests provide operational definitions of the Objective Statements and designate assessment standards. A hypothetical case of a moderately MR 11-year-old girl illustrates how strengths and weaknesses can be described through the WSCCP by testing in several behavioral areas. In addition to providing initial assessment material, the system offers a means for charting progress in many skills areas and establishing specific objectives within meaningful education programs.

College of Education Experimental Education Unit University of Washington Seattle, Washington

1594 FEINBERG, PHIL. Sight vocabulary for the TMR child and adult: rationale, development and application. Education and Training of the Mentally Retarded, 10(4):246-251, 1975. m

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Although the role of a sight vocabulary may vary in programs for TMR adults and children, it is generally a functional and practical component of educational programs for both groups and can be a vehicle for implementing, facilitating, or extending cognitive, communicative, perceptual, and motor skills. In programs for TMR adults, a sight vocabulary is usually reality based, quantitatively circumscribed, relatively abstract, and related to socialization and vocational goals. The greater plasticity of children allows a sight vocabulary program for them to be broader, more academically oriented, and related to prereading skills. Sight vocabulary words can provide a framework of cues and sight-sound reinforcement in mastering the recognition and discrimination of alphabet letters, learning to perceive printed words as composed of letters, and learning to spell words correctly. Feedback regarding the development of specific skills involved in vocabulary acquisition enables teachers to assess and modify programs. (2 refs.)

Special Education Department Temple University Woodhaven Center Philadelphia, Pennsylvania

1595 HOLVOET, JENNIFER F.; KEILITZ, INGO; & TUCKER, DENNIS J. Mand interactions in retarded and nonretarded adolescents: an observational study in vocational settings. Education and Training of the Mentally Retarded, 10(4):237-245, 1975.

Nonspeech responses to mands (instructions, commands, directions, requests, and questions) made by MR and non-MR adolescents in vocational settings were examined and compared using an event sampling procedure. Observations were recorded which related to the types of mands presented, the classes of response evoked by those mands, and the consequent conditions for those responses. Data collected in institutional and community vocational settings indicated that the majority of mands are explicit and require an observable response; incorrect responding to mands per se is virtually nonexistent; and consequences provided for responses to mands are neither positive nor negative. Remedial procedures should emphasize the acquisition of a verbal repertoire of several appropriate alternatives to immediate and direct compliance with mands. The observational methodology used within a natural environment seems to offer a firm base for a functional approach to the design of rehabilitation programs for specific language deficiencies. (14 refs.)

Department of Special Education University of Kansas Lawrence, Kansas

1596 APFFEL, JAMES A.; KELLEHER, JOHN; LILLY, M. STEPHEN; & RICHARDSON, RALPH. Developmental reading for moderately retarded children. Education and Training of the Mentally Retarded, 10(4):229-235, 1975.

Sixty TMR children (CA 10 to 14) from 5 schools were enrolled in a project to demonstrate precedures for systematic examination of their individual rates and accuracy in beginning reading programs. The DISTAR and Rebus reading systems were used, and progress for each child was charted on the basis of his performance as reflected by the testing procedures in the reading programs. During a year of instruction nearly all of the participants demonstrated some capacity to profit from reading instruction. Although a few students failed, some students in both DISTAR and Rebus programs advanced to more conventional reading programs. Program decisions for individual youngsters were based on demonstrated rate of progress in learning to read rather than on assumed potential as implied by MR label. Although not all TMR children can profit from academic training, instructional programs should be devised which can optimize their learning potential. (21 refs.)

Department of Special Education University of Hawaii Honolulu, Hawaii

1597 Virginia. Congress. Report of the Committee to Study the Education of Handicapped Children in Facilities of the Department of Mental Health and Mental Retardation and the Virginia School at Hampton and the Virginia School for the Deaf and the Blind at Staunton. (Senate Document No. 6), Richmond, 1976. 31

The findings of an extensive study of special education provided in Virginia are presented to the Governor and General Assembly of Virginia, and recommendations are offered concerning curriculum guidelines, personnel standards and ratios, funding, and administrative procedures. A suggested amendment to Section 22-223 of the Code of Virginia approving a triennial census of the school population and to Section 37.1-96 concerning residence of patients in hospitals and school age children in state hospitals generally is attached as Appendix A. The resolution underlying the present study is also included.

1598 Oregon University. Implementing Special Education Services in Rural Remote Areas. The Proceedings from the Western States Topical Conference (Salt Lake City, Utah, February 3-6, 1975). A Guidelines Document and Idea Resource for: Educators; Parents; Concerned Citizens; Others. Eugene, Oregon: Northwest Regional Special Education Instructional Materials Center, 1975. 248 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$12.05, plus postage. Order No. ED103188.

Guidelines for educators, parents, concerned citizens, and others are presented in the form of proceedings of a 3-day conference on implementing special education services in rural remote areas, which was held in Salt Lake City, Utah, in February 1975. Ideas are presented as an index to possible resources for use in any typical rural area and are expected to stimulate the planning and implementation of programs. The following divisions are defined and further divided into substrategies: 1) funding and law; 2) communication and commitment, staffing, and responsibility and accountability; and 3) identification, curricula, training, and parent and community. Each of these areas is further divided into various tactical arenas for which specific procedural prescriptions are designated.

1599 STEPHENS, WYATT E. Mainstreaming: some natural limitations. *Mental Retarda*tion, 13(3):40-41, 1975.

Realistic predictions about the outcome of mainstreaming mildly MR children in the educational system may be possible if consideration is given to: 1) the upper limits of the child's potential, as determined by the causes of his MR; and 2) the effectiveness of special education programs in providing experiences which help the child to achieve his full potential. Examination of these variables suggests that neither mainstreaming nor special education offers clear superiority for delivery of services to all MR children. Children with higher maximum potential would probably profit substantially from mainstreaming. Even very powerful educational techniques and forms of program organization may be ineffective in bringing the intellectual and cognitive skills of all mildly MR persons to a level where they can be integrated into a regular classroom. (7 refs.)

Department of Special Education Southern Illinois University Carbondale, Illinois

1600 HALL, KEITH A.; & KNIGHT, JOHN.

Continuing Education (Inservice) for
Teachers via Computer-Assisted Instruction. Final Report. University Park,
Pennsylvania: Computer Assisted Instruction Lab, University of Pennsylvania,
1975. 131 pp. Available from ERIC
Document Reproduction Service, Box 190,
Arlington, Virginia 22210. Price MF \$0.76;
HC \$6.97, plus postage. Order No.
ED111327.

Computer Assisted Renewal Education (CARE), a series of computer-assisted instruction (CAI) courses, and a prototype mobile CAI van were developed to train teachers to recognize handicapping conditions and to develop prescriptive and diagnostic teaching methods for handicapped students. The project was designed to assist with the regular class placement of handicapped students, as required by many state laws. Project accomplishments were monitored in 4 areas: project administration, curriculum maintenance, evaluation, and inservice teacher education included with this final report are the CARE service agreement, instructional development guide, and site brochure.

1601 The Resource Room: An Access to Excellence: A Comprehensive Manual for Program Development and Implementation. Lancaster, South Carolina: South Carolina Region 5 Educational Services Center, 1975. 192 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$9.51, plus postage. Order No. ED115030.

Guidelines for development and implementation of a resource room for learning disabled (LD) students are presented. A variety of topics are discussed, including: professional preparation of the resource and regular classroom teacher; resource room organization and curriculum; reporting student progress; use of volunteers; activities for parents of LD students; and behavior control techniques. The title, description, instructional level, and publisher are listed for over 70

instructional materials in the following areas: equipment, language arts, reading comprehension, mathematics, and visual and auditory perception. Remediation techniques are recommended for visual discrimination, visual-motor coordination, auditory discrimination, language, phonetics, handwriting, and coping skills. A list of audiovisual materials for teachers and forms for referral and for the principal's evaluation of a resource unit are included in the appendixes.

1602 WARSHOW, JOYCE, P.; & BEPKO, RAYMOND A. The Factor Structure and Sources of Variation Underlying the Social Learning Environment Rating Scales: Monograph 1. New York, New York: Curriculum Research and Development Center in Mental Retardation, Yeshiva University, 1975. 90 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$4.43, plus postage. Order No ED115029.

The factor structure of the Social Learning Environment Rating Scale (SLERS), an instrument designed to measure teacher-student behavior based on the Social Learning Curriculum (SLC), was investigated in 17 intermediate level classes for the EMR. The classes were observed utilizing 6 lessons from Function VII (Emotional Security) of the SLC. Data were analyzed based on 5 factors: problem emergence, problem clarification, problem resolution, application of learning, and the social learning environment. Results indicate that, in general, the factor structure underlying the SLERS validated the theoretical basis of the SLC.

1603 QUIGLEY, STEPHEN, et al. An Evaluation of the Regional Programs for Educating Low-Incidence Disabled Children in Illinois. Urbana, Illinois: Survey Research Laboratory, University of Illinois, 1975. 284 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$14.59, plus postage. Order No. ED115028.

Recommendations and findings from an evaluative study of 16 Illinois regional programs for education of low-incidence disabled children are presented which focus on organizing, financing, and delivering improved statewide services. Recommendations emphasize the need to: implement comprehensive service programs for mutiply handicapped students; provide legal status (in the form of intermediate school districts) for regional education and full state funding of special education costs; evolve educational programs for specific types of handicaps; and improve communication among various state educational agencies. Evaluations of several regional programs outside Chicago, Chicago area public and private school programs, and the Area Learning Resource Center-Regional Educational Media and Information Service system are also provided.

1604 WING, LORNA. Assessment: the role of the teacher. In: Everard, M. P., ed. An Approach to Teaching Autistic Children. Oxford, England: Pergamon Press, 1976, Chapter 2, pp. 15-30.

A scheme to be used by teachers for observing children with the language, cognitive, and perceptual disorders found in early childhood autism draws heavily upon scales and methods of assessment already available. Two kinds of observations are made in the scheme: one concerning the stage a child has reached on the scale of normal development, including such items as feeding, washing, and dressing, and the other concerning deviations from normal development, such as echolalia, intense resistance to change, and various forms of difficult behavior. The scheme covers numerous aspects of function, all of them relevant to the child's level of social and intellectual performance and, thus, to the teaching program. In addition to its classroom use, the scheme can be used by parents to describe the behavior of their child at home.

Medical Research Council Social Psychiatry Unit Institute of Psychiatry De Crespigny Park London, S.E.5, England

1605 ELGAR, SYBIL. Organization of a school for autistic children. In: Everard, M. P., ed. An Approach to Teaching Autistic Children. Oxford, England: Pergamon Press, 1976, Chapter 7, pp. 121-131.

In 1965 the National Society for Autistic Children (England) opened its first school, the Ealing School, in which a highly qualified teaching staff lives, works, and plays with children diagnosed as autistic or psychotic, some of them having additional handicaps such as epilepsy, physical handicaps, brain damage, or impaired hearing or vision. Within the school there are 9 teaching groups, with pupils grouped according to CA as far as possible. In all situations, systematic efforts are made to extend and improve control, awareness, understanding, vocabulary, and knowledge. Adequate time is allowed also for creative subjects, such as music, dancing, handwork, crafts, cookery, and play. To help with effective learning, separate and particular programs suited to each child's needs are devised within the structure of the overall curriculum. Teachers are trained to foresee and avoid difficult situations, but not to the extent that a child is overprotected. The children are trained to be socially acceptable, happy, integrated, and, within individual limitations, useful and responsible. The boarding department as a home environment is less demanding than the school situation, but the structure remains constant. The problems encountered at Ealing have not exceeded those in other schools and probably have been far fewer than in many schools.

Ealing Autistic Trust Somerset Court Brent Knoll, Somerset England

1606 SMILEY, CONSTANCE J.; et al. Replication of an Inter-Disciplinary Approach to Early Education of Handicapped Children 0-3 Years. Peoria, Illinois: Peoria Association for Retarded Citizens, 1975. 203 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76, plus postage. Order No ED116416.

Information is provided on diagnosis and evaluation, parent involvement, funding and public awareness, job descriptions and training, a child development-home program, speech and language, and structuring a day program of an Illinois program entitled "An Inter-Disciplinary Approach to Early Education of Handicapped Children Ages 0-3 Years." Complete evaluation services are offered to multiply handicapped, behaviorally or

emotionally disturbed, speech and hearing impaired, developmentally delayed or MR, and physically handicapped children, and program options include: 0-3 homebound program, nursery schools, public school early education programs, outpatient physical therapy, other agency day programs, and an allied agency's developmental training. Program components which are reviewed in charts, forms, outlines, and diagrams include language definitions and evaluative tools, vocabulary lists, developmental tasks, behavioral objectives, observational guidelines, hearing tests, personnel, job descriptions, and developmental evaluation. Outlines for parent groups, summaries of inservice training experiences, and guidelines for class organization are also provided. Statistics which indicate rises in mean percentage of functioning between first and last testing for program participants are reviewed.

1607 The handbook of physical education and activities for exceptional children. Washington, D.C.: American Alliance for Health, Physical Education, and Recreation, 1975. 59 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No. ED116427.

A guide which provides information on 27 perceptual-motor and psychomotor tests and scales for use with handicapped children is discussed. The guide covers locally developed assessment devices, motor ability, perceptualmotor development and psychomotor tests, background information to assist in the selection of tests and in devising instruments based on the best individual components of standardized batteries, and concepts which pertain to perceptual-motor testing and acitivities. Summaries of various psychomotor tests and scales include information on test availability, the methods and data that the test measures, administrative considerations, and general comments. Samples are also included of locally-designed testing instruments and the ways in which school districts have devised their own methods of scoring, recording, and tabulating both individual and group results of various measuring devices. The selective use of summary charts is recommended as an aid in devising items and batteries to evaluate specific strengths and weaknesses of handicapped individuals. The guide is useful in planning physical

education activities for the handicapped, and in making valid and informed decisions regarding the selection of test instruments for prescriptive and diagnostic purposes.

1608 Home life programming for educables. 1
March 1971-28 February 1974. Final
Report. Dawson Springs, Kentucky: Outwood Hospital and School, 1974. Available
from National Technical Information
Service, Springfield, Virginia 22161. Price
MF \$2.25; HC \$3.25. Order No.
PB-243-058.

The success of the Home Life Program (1971-1974) in teaching new skills and in improving self-help skills and appropriate behavior in 100 EMR institutionalized persons is discussed. The program was initiated as a demonstration project, the purpose of which was to teach basic academic and homemaking skills to EMR persons. The program resulted in positive behavior changes in the participants, including increases in acceptable social behavior, decision-making abilities, and work responsibility acceptance. An additional response to the program was the shift in institutional philosophical orientation from a medical to a more socially oriented model.

1609 STRAIN, PHILLIP. Increasing social play of severely retarded preschoolers. Mental Retardation, 13(6):7-9, 1975.

Eight SMR preschoolers were observed under baseline and experimental conditions to determinine whether low incidence of social play could be increased by teacher manipulation of events immediately preceding the play period. When children were exposed to a sociodramatic story session in which each S was prompted to take a specific role, social play in subsequent recorded intervals increased from an average 15 percent to 70 percent. When sociodramatic activities were terminated, the amount of social play observed during free play immediately decreased for all children and remained stable for 8 days. All children immediately increased their level of social play when sociodramatic activities were reinstated. The intervention technique, which requires minimal teaching time and minor changes in classroom routine, can be easily transferred into an ongoing preschool routine. (4 refs.)

Department of Education American University Washington, D.C. 20016

TREATMENT AND TRAINING ASPECTS - Occupational

1610 DITTRICH, ANDREW. Estimated target populations for work activity centers: New Jersey counties. In: Rutgers University. Work Activity and the Developmentally Disabled: Estimated Needs and Present Services in New Jersey. Dittrich, Andrew. New Brunswick, New Jersey: Bureau of Economic Research, 1975. Chapter 4, pp. 59-63.

The establishment of work activity participation rates allows the estimation of the target population of adult eligibles for work activity programs in the New Jersey counties. All MRs, whether multiply handicapped or not, are included in the estimates for MR. The statewide totals are 368 PMRs, 4 530 in the IQ range 25 to 49, 2,966 in the IQ range 50-69, 4,079 adult epileptics, and 2,226 cerebral palsied adults. Altogether, 14,153

adults are potentially eligible for work activity programs in New Jersey.

Bureau of Economic Research Rutgers University New Brunswick, New Jersey 08903

1611 TALKINGTON, LARRY W.; & OVER-BECK, DANIEL B. Job satisfaction and performance with retarded females. Mental Retardation, 13(3):18-19, 1975.

Job performance of satisfied and dissatisfied groups of MR female workers was compared. Ss, who were residents of a public facility for the MR, were assigned to satisfied or dissatisfied groups on the basis of their comments to charge counselors. Job performance was rated by work station supervisors. The satisfied group was rated significantly higher on 7 of the 10 variables (efficiency,

dependability, interest, helpfulness, carefulness, pleasantness, and responsibility.) Similar studies of non-MR persons have found job satisfaction highly related to attendance, dependability, and efficiency. The concept of self-direction in job selection may be positively related to productive assignment with MR workers. In light of these data, the traditional concept of training for general work habits, opposed to specific training to workers' interest and goals, may need reexamination. (5 refs.)

Fairview Hospital and Training Center Salem, Oregon 97310

1612 DITTRICH, ANDREW. Work Activity and the Developmentally Disabled. New Brunswick, New Jersey: Bureau of Economic Research, Rutgers, The State University, 1975. 135 pp. Available from Rutgers Disability and Health Economics Research, Rutgers University, 165 College Avenue, New Brunswick, New Jersey 08903. Price, \$5.00.

Based on 1970 census figures and established prevalance rates, an estimate was made of the number of developmentally disabled persons 21 years of age or older in New Jersey, and this potential user population was compared with current work activity services in the state. The number of MR, epileptic, and cerebral palsied persons in each county was determined, and the potential clientele for work activity programs in each county calculated. Agency lists and telephone interviews were used to assemble a county-bycounty inventory of services, which was then compared to the local potential clientele. Factors influencing site selection for work activity programs and centers, approximate costs, and guidelines for modifying existing services and creating new programs are described.

1613 MALEVER, MICHAEL; & MATYAS, GEORGE, JR. Project PRICE. Career education materials for educable retarded students. Working paper No 6. Columbia, Missouri: College of Education and Department of Counseling and Personnel Services, University of Missouri, 1975. 45 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No.ED118890.

An annotated bibliography of resources useful to teachers and counselors or EMR students was developed by Project PRICE (Programming Retarded in Career Education) as part of the larger effort to provide a method by which schools could teach families, the community, and educators to present better career education and supportive services to EMR students. The materials are presented in 3 groupings of the 22 essential competencies identified by the project, including daily living skills (9 competencies), personal-social skills (7 competencies), and occupational preparation (6 competencies). The materials for each competency are in turn divided into those appropriate for elementary, junior high, and senior high school students. Each entry includes information on suggested uses and audiences, cost, and publisher or supplier.

1614 The role of the sheltered workshops in the rehabilitation of the severely handicapped. Volume I – Executive summary. New York, New York: Greenleigh Associated, Inc., 1975. 45 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED117475.

A 3 volume study of the role of sheltered workshops in the rehabilitation of the severely handicapped is summarized, including a review of the study's findings and a brief description of the research that was undertaken in the project. The study was based on site visits to 400 sheltered workshops throughout the country. The 8 sections into which the study was divided include: the state of the art and the workshop universe; the project's origins and research approach; the clientele of the workshops and the manner in which they become clients; workshop staffs; programs and services offered by sheltered workshops; workshop's impact on their clients; and interesting concepts utilized in foreign and innovative domestic projects related to workshops. Specific recommendations are included based on the strengths and weaknesses determined from the overall assessment.

1615 GOLDSTON, M. H., JR.; & HEFLEY, ROBERT J. Acceleration and Expansion of the Diagnostic Services Project in Houston, Texas. A Final Report. Austin,

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and deve scale Texas: Texas Rehabilitation Commission, 1975. 79 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$4.67, plus postage. Order No. ED117472.

A project which demonstrates the feasibility and effectiveness of providing faster, more relevant, and more comprehensive diagnostic services to vocational rehabilitation clients with a wide range of disabilities is discussed. Physically disabled. alcoholic, mentally ill, and MR clients were randomly assigned to either an Experimental Unit (E) or a Control Unit (C). The E referrals received audiovisual orientiation, vocational rehabilitationoriented social evaluation interview, psychological testing, short-term work evaluation, faster general medical examination, medical transcription, and transportation. Reviewed were 749 E and 722 C cases, and it was found that, generally, the differences between the 2 groups were small. Recommendations for future studies are included.

1616 BECKER, RALPH L. AAMD-Becker Reading-Free Vocational Interest Inventory Manual (and Male and Female Inventories). Washington, D.C.: American Association on Mental Deficiency, 1975. 111 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$6.01, plus postage. Order No. ED118593.

The AAMD-Becker Reading-Free Vocational Interest Inventory is a nonreading vocational preference test for use with MR persons, particularly the EMR at the high school level. The instrument is beneficial in identifying vocational interest areas, thus aiding counselors in the vocational planning, training, or job placement of individuals. There are 11 male interest areas, which include automotive, building trades, clerical, animal care, food service, and patient care, and 8 female interest areas, including laundry service, light industrial, clerical, personal service, food service, and patient care. Scores in each interest area are derived from pictorial items presented in 55 male triads and 40 female triads. The test may be administered within a 45-minute class period. Information is provided on administering, scoring, and interpreting the test, as well as the development of norms, intercorrelations of the scales, reliability, and validity.

1617 A guide and policy manual of vocational instruction and supportive services for disadvantaged and handicapped persons. Bismarck, North Dakota: North Dakota State Board for Vocational Education, 1975. 24 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED117545.

A guide for vocational education programs and supportive services for North Dakota's disadvantaged and handicapped population is provided. Technical assistance and the procedures that are valuable in organizing and administering occupational training programs for the disadvantaged and handicapped are discussed. Specific requirements for receiving special services, services that may be funded, identification of handicapped or disadvantaged persons, application procedures for a disadvantaged or handicapped program, and the reimbursement rate for special needs programs in North Dakota are among the topics which are reviewed.

1618 Report of the Comprehensive Service Needs Study. (Final Report). Washington, D.C.: Urban Institute, 1975. 871 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$1.67; HC \$46.21, plus postage. Order No. ED117930.

A study of comprehensive service needs for the severely handicapped, which was authorized by section 130 of the Rehabilitation Act of 1973, is discussed. Information is provided on the vocational rehabilitation (VR) system, such as VR and the most severely handicapped, analysis of individuals rejected by the VR, and a benefit/cost analysis of service to the severely handicapped accepted for service by VR. Other aspects of the study which are discussed include definitions, estimates of the severely disabled population not in institutions, the most severely handicapped in institutions, analysis of individuals most severely handicapped who received services at comprehensive medical rehabilitation centers, analysis of dependency, architectural barriers, the mentally ill, geographic mobility of the handicapped, transportation, employment and labor force participation, the MR, the physically handicapped, survey of providers of rehabilitation, rehabilitation

facilities and workshops, disincentives in income tranfers, programmatic options for providing services, and financial options. A summary of the major findings is also presented, as well as data on research and demonstrations, and policy interpretations.

1619 HOLLAND, PAUL; & PAINE, IVAN. Experimenting with Trident. Special Education: Forward Trends, 2(4)21-22, 1975.

The Trident Project was developed to help MRs who are leaving school to discover and develop their individual potential; to foster their maturity; and to encourage employers to value the skills, experiences, and personal qualities of each student. The Project, which operates in several geographic areas and is also open to students from regular schools, is based on the provision of periods of work experience. Students are carefully assessed in terms of school attainment, physical characteristics, and social skills before placement and after completion of a 3-week work period. The latter assessment is based on a report from the employer as well as comments of the pupil, parents, and staff. Work experience before the final transfer from school to work gives the student a realistic, mature approach toward employment, a transitional device, and a clear idea of his aptitudes and capabilities. Trident has resulted in improvements in attitudes, behavior, reliability, responsibility, and cooperativeness, as well as a reduction in job turnover and a marked improvement in attendance.

Deerswood School Crawley, England

1620 HUTCHINSON, DAVID; & CLEGG, NORMAN. Orientated towards work. Special Education: Forward Trends, 2(1):22-25, 1975.

From its inception as a pilot scheme for 10 handicapped children, the work orientiation unit at the North Nottinghamshire College of Further Education has grown to a program serving over 110 students with physical, emotional, mental, or learning handicaps. The program includes individualized, planned vocational education and (for the most able) work experience; general education based on individual needs; and recreational education within the context of a college which

integrates adult education and education of the handicapped. Educational plans are formulated on the basis of medical, social, and educational assessment as well as interviews. All except the most severely handicapped students (who work in a simulated work environment in the college) have outside work experiences in open employment or sheltered settings. Students are offered a wide range of job experiences, and each is given the opportunity to try several jobs. College and industrial cooperation in assessment and placement is a key aspect of the program.

Work Orientation Unit North Nottinghamshire College of Further Education Nottinghamshire, England

1621 BELLAMY, G. THOMAS; PETERSON, LESLI; & CLOSE, DANIEL. Habilitation of the severely and profoundly retarded: illustrations of competence. Education and Training of the Mentally Retarded, 10(3):174-186, 1975. p

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The possibility of providing vocational opportunities to the MR which raise expectations regarding the vocational abilities of these groups is illustrated by work performed by SMR and PMR adults currently employed in a special program. The program includes a subcontract shop which performs small parts assembly work. A step-bystep procedure combined with reinforcement techniques and criterion testing was used to train Ss to perform tasks appearing exceptionally difficult by typical workshop standards and requiring considerable training in fine movements and visual discriminations. Apparently complex tasks were learned by Ss in comparatively brief training periods, and productivity was maintained within normal ranges. It may be possible to design environments which develop and maintain nonMR work behaviors in SMRs and PMRs, but considerable research is needed to identify personal, task, and setting variables which may affect habilitation outcomes and to assess the feasibility of various modes of training and supervision. (43 refs.)

Research Center on Human Development University of Oregon Eugene, Oregon 1622 KNOWLES, CLAUDIA; VOGEL, PAUL; & WESSEL, JANET A. Project I CAN: individualized curriculum designed for mentally retarded children and youths. Education and Training of the Mentally Retarded, 10(3):155-160, 1975.

Individualized physical education and recreational curriculum materials for TMR and SMR children and youth have been developed, disseminated, and evaluated thhough the I CAN Project. Major curricular areas of focus are psychomotor, cognitive, and affective skills deemed most critical for MRs in maximixing healthy growth and development, participating in play and leisure activities common to the culture, and joining with others in play and work. Instructional materials are assembled into modular teaching resource kits which, when supplemented by a teacher's guide, provide a sequentially personalized activity program for each learner. An accountability model is automatically operationalized with proper implementation of the program. The I CAN program has been field tested and proven beneficial with SMR and TMR children as well as children with other special learning needs. Materials are available for workshop demonstrations and/or field testing sites.

I CAN Program Michigan State University East Lansing, Michigan

1623 CORMANY, ROBERT B. A careers unit for the junior high EMR student. Education and Training of the Mentally Retarded, 10(3):151-154, 1975.

Forty-six students in 3 junior high school EMR programs participated in a 10-lesson program which successfully 1) increased student awareness of individual occupational interests and aptitudes; 2) oriented students to available sources of career information; and 3) acquainted them with procedures for making an in-depth study of an occupation. Program resources included a film depicting various job clusters; a series of comic books (written at a fourth grade reading level) describing job clusters; and a set of microfiche cards containing information relevant to job opportunities, requirements, and benefits. Testing with the Career Maturity Inventory indicated that realism about career opportunities increased as a result of the program, while the Picture Interest

Inventory showed that the pattern of student interests remained fairly constant, demonstrating no substantial or erratic fluctuations in interests as a result of the large volume of information. Students and teachers were satisfied with the unit and recommended its expansion. Main criticism centered on the amount of time allotted to specific portions of the program. (3 refs.)

Department of Special Education University of Illinois Urbana, Illinois

1624 BROLIN, DONN; DURAND, RICHARD; KROMER, KEITH; & MULLER, PAUL. Post-school adjustment of educable retarded students. Education and Training of the Mentally Retarded, 10(3):144-149, 1975.

Responses of 71 former EMR students who attended Minneapolis high schools between 1966-1972 indicated that students who participated in a work-study group attained relatively better job adjustment than students who participated in a strictly academic program. However, a large percentage of the total group had problems in achieving vocational adjustment. At follow-up (1972-73), 44 percent of the total group was unemployed, and many others reported low pay, low level jobs, inability to find and apply for jobs, lack of experience or appropriate skills, and lack of job openings. Of those employed, 70 percent were satisfied with their current jobs. Better job adjustment for EMRs may be fostered by secondary programs with career education as a prime curricular thrust, more post-school assistance, closer relationships between school personnel and outside agencies, and more systematic follow-up efforts. (14 refs.)

College of Education University of Missouri Columbia, Missouri

1625 YAGEL, MYRON M. Measures of self-concept which are predictors of job success for Appalachian adolescents with school learning problems. Education and Training of the Mentally Retarded, 10(4):252-258, 1975.

The relationships between dimensions of self-concept and teacher ratings of job ability and job success were examined in 31 Appalachian students (CA 14 to 17) with learning problems who were enrolled in a career education program and held part-time jobs. Students were tested during a 2-month time period using the Self Social Symbols Test and the Self Concept of Ability as a Worker. Teachers were administered The Teacher's Concept of Ability as a Worker. The 4 (out of 13) self-concept measures and teacher ratings with highest predictive value for job success were: 1) conception of self as complex, possibly reflecting

diverse experiences and social relationships; 2) friend's concept of the student as a worker; 3) social interest or enjoyment of social interaction; and 4) teacher's concept of student's ability as a worker. Self-concept measurement may be an important facet of career education, with some dimensions related to job performance in a way which permits a prediction of success. (15 refs.)

Department of Special Education Indiana University of Pennsylvania Indiana, Pennsylvania

TREATMENT AND TRAINING ASPECTS - Therapy

1626 GRAY, MARY Z. What are we waiting for? The problem is growing. A report of a conference on early intervention with high-risk infants and young children. Washington, D.C.: Association for Childhood Education International, 1975. 30 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia. Price MF \$0.76; HC \$1.95, plus postage. Order No.ED116384.

Papers presented at the Conference on Early Intervention with High-Risk Infants and Young Children, held in Chapel Hill, North Carolina, on May 5-8, 1974, are overviewed. Topics discussed included the state of the art of early intervention, intervention programs at the University of North Carolina, case findings, screening, diagnosis, and tracking, 8 demonstration projects, including the Portage Project, and other pertinent research, such as that on mother/child interaction. Committees at the conference proposed 30 recommendations in such areas as research, education, pediatrics, parents, community development, and nursing and rehabilitation. Participants at the conference are listed.

A punishment procedure (Full Cleanliness Training) combined with positive reinforcement was successful in treating a TMR 8-year-old male for encopresis. The S, who also exhibited a toilet phobia, achieved bowel control after 16 weeks of exposure to a procedure which entailed: 1) parental expression of displeasure about soiling; 2) requiring him to scrub his soiled undergarment for at least 15 minutes; and 3) requiring him to bathe and clean himself. The S had soiled only twice at 18 week follow-up; however, post-treatment check at 24 weeks revealed a resumption of soiling (about once a week) which appeared to be related to inconsistent application of the training program by the mother and the teacher. Advantages of Full Cleanliness Training include directly relating soiling behavior to correcting the effects of inappropriate behavior; a potential disadvantage is the possibility of physical confrontation between the parents and child in the execution of the procedure. (10 refs.)

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1627 DOLEYS, DANIEL M.; & ARNOLD, SUSAN. Treatment of childhood encopresis. Full Cleanliness Training. Mental Retardation, 13(6):14-16, 1975. 1628 MURPHY, MICHAEL.; & ZAHM, DAVID. Effects of improved ward conditions and behhvioral treatment on self-help skills. Mental Retardation, 13(6):24-27, 1975. Environmental enhancement and improved staffto-resident ratio did not contribute to the acquisition of self-help skills in SMR and PMR persons unless specific skill acquisition procedures were used. Twenty-four SMR and PMR institutionalized Ss were assigned to groups to determine the effects of environmental enhancement and behavior modification training upon acquisition of skills. One group remained in an unrenovated day room-ward and received primarily custodial care at a 30-to-1 resident-to-staff ratio (control group); one group was placed in a modular living unit with a lower resident to staff ratio (8 to 1.5) and trained with nonspecific procedures (attention control); and a third group was exposed to both the new environment and self-help skill training based on operant shaping procedures (treatment group). The treatment group showed significant increases in self-help skills after behavior modification training. Attention control Ss did not change more than controls who remained on unimproved wards. Increases for the treatment group were reflected in self-help skills and communication skills. (10 refs.)

Department of Psychology Indiana State University Terre Haute, Indiana 47809

1629 GILBERT, GRANT O. Extinction procedures: proceed with caution. *Mental Retardation*, 13(6):28-29, 1975.

Although numerous studies confirm the efficacy of extinction procedures for modifying undesirable behavior of institutionalized MRs, difficulties in applying extinction have been noted. These include the problem of identifying and controlling all reinforcing events; the problem of increased rate of behavior during the initial stages of extinction; the failure of extinction to generalize beyond the treatment setting; little evidence of constructive learning; and the danger of strengthening the undesirable behavior one is trying to extinguish. Extinction procedures should be used only when it is possible to control all the sources of reinforcement which are maintaining undesirable behavior. To maintain consistency, everyone who works with a particular resident should be taught uniform methods for dealing with specific undesirable behaviors. These precautions may minimize the risk of failure in extinguishing undesirable behaviors. (5 refs.)

1630 MCGOVERN, KEVIN. A behavioral approach to intervention. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 9, pp. 179-193.

In the future, a behavioral approach to training and treatment must replace the present system of treatment of MR offenders in correctional institutions, and alternative strategies for intervention should be considered. Persons who are developing training and treatment programs for MR offenders should employ the behavioral (functional-analytic) approach, which places each client's behaviors into behavioral excess, deficit, or assets categories. After the completion of behavioral assessment procedures, trained personnel would begin to teach adaptive behaviors, preferably within the framework of community training programs. If the prediction is accurate that most incarcerated MR offenders are cultural familial, future treatment approaches should include early intervention programs in which potent social systems are developed that teach and reinforce children's adaptive responses. Social agents should begin to educate families that have a high probability of raising delinquent MR children, and they should utilize massive educational and communication systems to inform the general public. (43 refs.)

Woodland Park Hospital Portland, Oregon

1631 WESTPHAL, CARL R. Variables affecting the efficacy of a token economy. Mental Retardation, 13(6):32-34, 1975.

In an attempt to improve the efficacy of an existing token economy system in an institution for MRs, 4 variables (staff/resident ratio; consistency of reinforcement; immediacy of reinforcement; and location of tokens) were manipulated. The effect of these variables was assessed in terms of number of tokens earned and spent by 16 MR boys and the frequency of disruptive behavior. Increasing the staff to resident ratio did not significantly reduce disruptive behavior. However, this condition appeared to be a prerequisite for significant behavior change when reinforcement was changed from an interval schedule to a continuous schedule, tokens were made more visible and tangible, and consistency of reinforcement was increased. These 3 variables, alone or in combination, strengthened the effectiveness of the token economy when they were coupled with increased staff/resident ratios. A 3-month follow-up suggested a trend toward continued decreases in disruptive behavior in spite of decreased token earning and spending. This result suggests that disruptive behavior may have come under social and verbal control. (6 refs.)

University of North Dakota Grand Forks, North Dakota 58201

1632 BIRR, JACK. The Infant Development Center. Mission, Kansas: Infant Development Center, 1975. 48 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED107017.

The Infant Development Center (IDC) in Mission, Kansas, provides services to developmentally or behaviorally disturbed children from 1 to 3 years of age and to their parents. IDC's primary activities include infant developmental stimulation and parental training and support. Secondary activities are also provided, such as information exchange. Staff and facilities, process flow, research activities, and organizational and fiscal history are all described. Sample pretest and posttest scores are provided which illustrate the developmental progress of 19 children, and services provided for another 11 children are outlined.

1633 COLLETTE-HARRIS, MARTHA; & MINKE, KARL A. A behavioral experimental analysis of dyslexia. Resources in Education (ERIC), 11(5):101, 1976. 26 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED112621.

In a behavioral analysis of dyslexia, either traditional remedial reading treatment or behavioral therapy (the Staats Motivated Action Reading Technique) was administered to 2 groups of 6 9-10-year-old children. Positive reinforcement was given for correct answers in the individual word, oral reading, and silent reading and comprehension phases of the behavioral therapy. After behavioral treatment, both dyslexic and

nondyslexic children improved in reading achievement to approximately the same significant degree. The dyslexic children also increased their ratings on perceptual and attentional assessments. Data indicate that dyslexia may be considered to be a function of deficient learning history.

PASSMAN, RICHHRD H. Toilet training profoundly retarded adults with an automatic device. Resources in Education (ERIC), 11(7):104, 1976. 6 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$1.67, plus postage. Order No. ED119419.

A method was developed for toilet training PMR adults using an automatic device. Toileting behaviors were reinforced in 3 PMR adults through the use of a totally automatic reinforcement dispense: The device was reasonably priced, reliable, and more accurate than reinforcement delivered manually or semiautomatically.

1635 BRAST, D; et al. Cottage A Training program. Hospital improvement program. Part 1. Final Report. Resources in Education (ERIC), 11(5):105, 1976. 27 pp. Available from National Technical Information Service, Springfield, Virginia 22161. Price MF \$2.25; HC \$3.75. Order No. PB-243-272.

Sixty seven MR children who reside at the Orient State Institute were involved in the Cottage A Ward Behavior Modification Project in an attempt to develop self-help skills such as toilet training, and eliminate undesirable behaviors, which included head banging. The program was also intended to familiarize the staff with behavior modification skills, to organize an administrative structure for beginning and maintaining such a program, and to initiate a system for evaluating the program. Methods used with the residents to achieve positive results included scheduled sessions for practicing social skills and individual sessions in self-help behaviors. Lectures and discussion were held for the teaching staff. Evaluative measures included a training proficiency scale for use with trainers, and a comprehensive behavioral checklist to measure improvement in the residents.

1636 SAMARAS, MARY STENNING; & *BALL, THOMAS S. Reinforcement of cooperation between profoundly retarded adults. American Journal of Mental Deficiency, 80(1):63-71, 1975.

A single-subject reversal design was used for a study in whhch PMR institutionalized males learned to independently operate a cooperation machine which dispensed M and Ms in response to button pushing. When Ss were paired to study the development and maintenance of cooperation responses, a high and fairly stable rate of cooperative responding was seen during the first reinforcement. Responses decreased markedly after several extinction sessions and immediately rose when reinforcements were reinstituted. Friendly touching and gesturing by a number of Ss was observed as the experiment progressed, but increased social interaction was not generalized to the ward setting. Portable apparatus could be moved for specific generalization training, and the principle of the cooperation machine could be adapted to standardized playground equipment. (14 refs.)

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1637 NELSON, GARY L.; *CONE, JOHN D.; & HANSON, CHRISTOPHER R. Training correct utensil use in retarded children: modeling vs. physical guidance. American Journal of Mental Deficiency, 80(1):114-122, 1975.

Strategies involving physical guidance and modeling were compared for teaching relatively sophisticated mealtime skills to 24 MR males (mean intelligence quotient 25.3). Procedures which involved approximately 2 minutes of training prior to the meal were ineffective. When training was extended throughout the meals and a third method (physical guidance coupled with praise) was added in place of a control procedure, methods involving physical guidance produced significant improvement in the use of correct dining utensils. Modeling did not effect gains in the use of utensils. When physical guidance and praise were used with all groups, similar levels of

performance were achieved. Correct utensil use was maintained during 5 days of follow-up observation. (15 refs.)

*Department of Psychology West Virginia University Morgantown, West Virginia 26506

1638 REPP, ALAN C.; KLETT, SYLVIA Z.; SOSEBEE, LYNN H.; & SPEIR, NANCY C. Differential effects of four token conditions on rate and choice of responding in a matching-to-sample task. American Journal of Mental Deficiency, 80(1):51-56, 1975

Seven male MRs (mean intelligence = 42) participated in token studies designed to provide data concerning the difference in baseline effects, the effects of response cost, and the effects of concurrent and multiple schedules of reinforcement in a matching-to-sample task. Two baseline conditions were used: one in which nonexchangeable tokens were delivered for correct responses (C) and one in which no tokens were given (D). Condition C resulted in significantly more responses, fewer errors, and a student preference for that condition. There was no significant difference with respect to correct responses between a condition (A) in which correct responses produced tokens and incorrect responses had no effect, and a condition (B) in which correct responses produced tokens and incorrect responses removed tokens. However, more errors were made in Condition A than in Condition B. Concurrent schedules seemed to be more sensitive to experimental manipulation than schedules. (24 refs.)

Georgia Retardation Center 4770 N. Peachtree Street Atlanta, Georgia 30341

1639 MORRISON, THOMAS L.; & NEW-COMER, BARBARA L. Effects of directive vs. nondirective play therapy with institutionalized mentally retarded children. American Journal of Mental Deficiency, 79(6):666-669, 1975.

Fourteen institutionalized children participated in a study designed to determine whether providing MR children with play therapy opportunities would increase their language and motor skills as well as their social skills. Five children were assigned to nondirective play therapy, 5 were assigned to directive play therapy, and 4 served as controls (no treatment). Student nurses served as therapists. Developmental gains were assessed by pretreatment and posttreatment evaluation on the Denver Developmental Screening Test. A significant interaction effect was found between treatment group and measurement period for the Fine Motor and Personal-Social scales. Play therapy seemed to be effective in increasing developmental level, but directive therapy was not more effective than nondirective therapy in promoting developmental gains. (19 refs.)

University of California, Davis East Area Mental Health Clinic 9555 Kiefer Blvd. Sacramento, California 95826

1640 LAWHON, DEL; & THORNTON, LINDA.

An Annotated Catalog of Visual Materials
Relating to the Identification and Management of Handicapping Conditions of
Preschool Children. Charleston, West
Virginia: Appalachia Educational Laboratory, 1975. 168 pp. Available from ERIC
Document Reproduction Service, Box 190,
Arlington, Virginia 22210. Price MF \$0.76;
HC \$8.24, plus postage. Order No.
ED112605.

A total of 232 films, slides, and videotapes concerning the identification and management of handicapping conditions in preschool children were cataloged. For 118 items, information provided includes title, type, length, production date, producer, distributor, cost, an evaluative summary, audience, and sources in the Appalachian area. Unreviewed items are listed alphabetically by title within medium categories, and the name of the distributor is provided. Annotated visuals are also indexed by title and by category. The category headings are as follows: autism; Down's syndrome; emotional disturbance; hearing impairment; informational, instructional, language, and learning disorders; physical and neurological handicaps; visual impairment; and testing and assessment.

1641 DICKS, JOSEPH L. Cooperation of the MR child during dental procedures with some associated variables. *Mental Retarda*tion, 13(3):28, 1975.

Variables affecting the behavior of MR children as dental patients were analyzed in a retrospective study of 48 institutionalized children. Information was originally gathered in a study designed to evaluate the relative importance of visual and verbal aspects of communication to the cooperation of children in a dental situation. Initial cooperation scores of children were related to: 1) degree of MR; 2) daily living cooperation score; 3) number of previous institutional dental experiences; 4) length of institutionalization; and 5) age and sex. More effective and efficient behavior intervention programs can be instituted for MRs if behavior can be better predicted. (1 ref.)

Dental Program Georgia Retardation Center Atlanta, Georgia 30341

1644 GARBER, NORMAN B. & DAVID, LEIGH E. Semantic considerations in the treatment of echolalia. *Mental Retardation*, 13(5):8-11, 1975.

A developmental-behavioral approach to the abatement of echoic behavior was suggested by a study of 2 MR children. Both children echoed all forms of yes-no questions before treatment with 2 different programmed procedures. It was hypothesized that a systematic presentation of questions and their corresponding answers would result in each child's comprehending the new form and responding appropriately. One 5-year-old girl, trained in a 20-step, 10-week program, did not learn to answer programmed confirmation-denial questions. She later used "yes' responses to questions without seeming to comprehend, and "no" as a verbal initiator for refusal purposes. The concepts of acceptance and rejection might have comprised a more logical intervention strategy. A 4-year-old girl was successful in learning to answer acceptance-rejection questions and later began to answer confirmation-denial questions without intervention techniques. (15 refs.)

School of Hearing and Speech Sciences Ohio University Athens, Ohio 45701 1643 U.S. National Institute of Mental Health. Behavior modification: perspective on a current issue. Brown, Bertram S., et al. Rockville, Maryland: National Institute of Mental Health, 1975. 32 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.95, plus postage. Order No. ED109853.

A perspective is provided on the issue of behavior modification, beginning with an overview of the history of the application of this technique and a review of the critical issues involved. Behavior modification is defined, and the concepts of systematic desensitization, aversive control, and positive reinforcement are illustrated. The effectiveness of behavior modification is evaluated, and programs currently funded by the Alcohol, Drug Abuse, and Mental Health Administration are described. Fear of control, the use of behavior modification in prisons, and the use of aversive control are among the critical issues examined. Emerging opinions on the legality of behavior modification and the need for ethical restrictions on its use are considered.

1644 TESKE, JUNE ELIZABETH. An evaluation of behavior modification and reduced class size with disturbed moderately and severely mentally retarded. *Dissertation Abstracts International*, 36(6):3574A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,655.

An appropriate public school program was sought for 28 emotionally and behaviorally disturbed children functioning in the moderate to severe range of MR. Sample selection was from elementary special education classes for severely handicapped children. The selected children displayed deviant behavior and were in danger of institutionalization, and intervention was considered urgent. Four project classes each had 6 to 8 children, a teacher, and an instructional aide. Contrast students had parallel selection processes but remained in their original classrooms, only 1 per class, during the study year; 14 were in classes for TMRs (class size 12), and 11 were in classes for other multihandicapped (class size 6 to 8). Prior to and subsequent to treatment, scores were obtained on intelligence, performance and behavior scales. The treatment was similarly effective in bringing many children to an increased level of awareness and responsiveness to their environment whether the experimental Ss were compared with small or large class contrast students. Despite gains in all curriculum areas, children remained in the same general range of retardation, making TMR the most logical class placement.

University of Southern California Los Angeles, California

1645 GARDNER, RICHARD A. Techniques for involving the child with MBD in meaningful psychotherapy. *Journal of Learning Disabilities*, 8(5):272-282, 1975.

A number of games have been successfully used to engage children with minimal brain dysfunction (MBD) in psychotherapy. MBD children are frequently inhibited, uncooperative, or resistant to meaningful treatment through traditional techniques. Games based on standard board games (the Talking, Doing, Feeling Game and the Board of Objects Game), grab-bag games, word games, and story-telling techniques are valuable additions to the assortment of methods and equipment used by the therapist. The large majority of MBD children will provide material when involved in those games that is otherwise unobtainable or obtainable only with difficulty. The enjoyment that children experience when involved in games may be heightened when they are capable of less structured revelation. The degree to which these games are utilized should be varied according to the needs and preferences of patients and the style of the therapist. (19 refs.)

155 County Road Cresskill, New Jersey 07626

PHILAGE, MARY LOU; KUNA, DANIEL J.; & BECERRIL, GLORIA. A new family approach to therapy for the learning disabled child. Journal of Learning Disabilities, 8(8):490-499, 1975.

A family-centered approach to treating the learning disabled child encompassed the child, his parents, and his teacher; entailed the personalization of each family member's problem; and was based on contracting for service. For 6-9-year-old children, the program's primary goal was remediation of perceptual dysfunctions through structured

activities and behavior modification techniques. The parent eventually assumed more responsibility for remediation, the goal being further independent function of the child. For 10-13 year-old children who had partially compensated for perceptual problems, socialization was the primary focus. Group discussions (which included parents at a later phase) centered on desired behavior changes and means of achieving them. Continuity was furthered by coordination of program aims and techniques (such as token reinforcement) with teachers. Children in both groups showed positive changes at the end of the program, as did parents who adhered to the contract and regularly participated in treatment. Teachers confirmed changes in children's behavior noted by parents and therapists. (1 ref.)

Department of Special Education Bowling Green State University Bowling Green, Ohio 43403

1647 CAWLEY, NORMAN. Visions of 1984. Special Education: Forward Trends, 2(2):25, 1975. (Letter)

Criticisms are directed at an article describing a combination of lecture and practical experiences designed to help teachers gain an understanding of behavior modification (Cook, March 1975). Although the examples described in the article indicated that behavior modification reduced unwanted behaviors, no attempt was made to investigate underlying causes of problems. A system which does not undermine the child's value to himself or his education is based on recording only long-term changes in adjustment or attitude, with the focus on the child rather than specific behaviors. To avoid the realization of Orwell's 1984, behavior modification should only be considered in certain drastic circumstances. (1 ref.)

Wanstead House School Margate, Kent, England

1648 COOK, JENNIFER M. M. Defence of behaviour modification. Special Education: Forward Trends, 2(4):23, 1975. (Letter)

A letter responding to criticisms of behavior modification techniques in special education notes that analysis of the antecedents and results of extreme behaviors only makes the natural process of behavior change more systematic. All behavior is influenced by the probability of payoffs. The role of the teacher is to respond to a child's behavior in a manner which encourages the child to change his own responses and adopt more appropriate behaviors. Behavior of the teacher may also change in the process. Although (as the critic suggests) a 5-week program did not extinguish inappropriate behavior, it changed behavior in a positive direction. (1 ref.)

Jordanhill College of Education Glasgow, Scotland

1649 SIMEONSSON, RUNE J.; & WIEGERINK, RONALD. Accountability: a dilemma in infant intervention. Exceptional Children, 41(7):474-481, 1975.

Difficulties regarding documentation of effectiveness and efficiency of early intervention programs for handicapped children stem from the complexity of problems which characterize such children and the tendency for objective measurements of outcome to be biased by expectancy and self-fulfilling prophecy. There is a lack of systematic longitudinal data on developmental parameters of handicapped children, and the variety and newness of intervention programs make it necessary to develop strategies which measure developmental changes which are functionally related to program intervention. The professional has both a practical and ethical responsibility to document his effectiveness to the consumer and his family, although the acquisition of data is costly and tedious. Projects serving handicapped children should collaborate on a systematic, nationwide basis to acquire base data, measurement instrumentations, and techniques. Establishment of minimum standards of accountability for early intervention funds could increase the mutual benefits of collaboration for both local programs and federal agencies. (16 refs.)

Department of Pediatrics University of Rochester School of Medicine Rochester, New York

1650 CORBETT, J. Aversion for the treatment of self-injurious behaviour. *Journal of Mental Deficiency Research*, 19, Part 2:79-95, 1975.

A review of the literature indicates generally positive effects of aversive treatment for severe self-injurious behavior in MRs. In most cases, the intensity of self-injury has been considerable, and aversive treatment has been effective in eliminating or reducing it significantly. The majority of studies emphasize the importance of a very active program to shape up positive responses concurrently with the use of aversion. Almost all cases of aversion for self-injury have involved the contingent use of electric shock. Few, if any, side effects have been noted, and general improvement and relief from other symptoms, such as whining, misery, and aggression, frequent accompaniments of selfinjurious behavior, have been reported. Mild self-injury, which cannot be tolerated and thus treated by extinction, is managed best by providing minimal effective restraint or protection as well as an active program to develop the positive skills of the MR. Where self-injurious behavior is life-endangering, where there is risk of severe nonreversible self-mutilation or brain injury, or where an alternative program is no longer possible because of the suppression of all positive behavior, aversive treatment may be justifiably considered. It should be carried out in situations where tight control can be maintained, and its efficacy should be tested in individual sessions in the initial stages. (78 refs.)

Hilda Lewis House Bethlem Royal and Maudsley Hospitals Denmark Hill London, SE5 8AZ, England 1651 DUKER, P. Intra-subject controlled timeout (social isolation) in the modification of self-injurious behaviour. *Journal of Mental Deficiency Research*, 19, Part 2:107-112, 1975

Time-out (social isolation) was applied to a 15-year-old PMR girl with chronic self-injurious behavior under normal ward conditions. Selfinjurious behavior, a major problem throughout the life of the S, was manifested primarily in banging her head against the window sill and in hitting her head with her hand. Observation during baseline conditions revealed that she displayed this behavior under many different circumstances. Statistical evaluation was done within an A-B design (A, baseline measures; B, measures during treatment) but without any reversal or withdrawal conditions. During treatment, social isolation decreased the probability of self-injurious episodes in comparison with the baseline period. Therefore, the average frequency of episodes in minutes during the baseline period and the average frequency of episode-contingent social isolations in minutes during the treatment were subjected to the statistical technique. The procedure reduced the self-injurious behavior to a near-zero level. Follow-up 4 months later showed that the rate of head-banging remained at a low level. (8 refs.)

Institute for Special Psychology University of Nijmegen Nijmegen, The Netherlands

PROGRAMMATIC ASPECTS - Planning and Legislative

U.S. Congress. Senate. Labor and Public Welfare, Committee on. Education for All Handicapped Children, 1975: Hearings Before the Subcommittee on the Handicapped of the Committee on Labor and Public Welfare, U.S. Senate. 94th Congress, 1st Session on S. 6 to Provide Financial Assistance to the States for Improved Educational Services to Handicapped Children (April 8, 9, 15, 1975). Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, 1975, 455 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$23.48, plus postage. Order No. ED116399.

The text of Senate hearings on S. 6 and 2 proposed amendments are presented in a booklet, as well as the testimony of witnesses, communications to Senators, statements from organizations, and articles and publications which are concerned with education. S. 6, entitled "Education for All Handicapped Children", is a bill to provide financial assistance to the states for improved educational services for handicapped children. Witnesses who testified included Frederick Weintraub of the Council for Exceptional Children, Janice Peterson, a teacher of the blind, Albert Pimentel of the American Coalition of Citizens with Disabilities, U.S. Senator Charles Mathias of Maryland, and James Galloway, executive director of the National Association of State Directors of Special Education. Statements are provided from the following organizations: National School Boards Association; Maryland State Department of Education; Consortium Concerned with the Developmentally Disabled; American Foundation for the Blind; and American Federation of Teachers. Current and proposed rules and regulations in New Jersey which pertain to handicapped children are appended.

1653 U.S. Health, Education, and Welfare Department. A summary of selected legislation relating to the handicapped, 1974. Washington, D.C., 1975. 45 pp. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price \$0.70.

The titles, public law numbers, and summaries of general scope and implications of 32 legislative acts enacted to benefit the handicapped by the 93rd Congress (1973-1974) are provided. Major legislation concerning handicapped persons included: the 1974 Education, Rehabilitation, and Social Services Amendments; the Housing and Community Development Act of 1974; and the 1973 Social Security and Rehabilitation Amendments. The 1973 Maternal and Child Health Amendments, the 1974 Social Security Amendments concerning the Supplementary Security Income program, and the Juvenile Delinquency and Prevention Act of 1974 are also summarized. The legislative histories of 36 1973-1974 laws and cross references from federal legislative summaries from 1963 to 1972 are also included.

1654 GETTINGS, ROBERT M. 93rd Congress: federal laws and regulations affecting the handicapped. Arlington, Virginia: National Association of Coordinators of State Programs for the Mentally Retarded, 1975. 39 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED119406.

Activities in the 93rd Congress affecting the handicapped in the U.S. are reported. Handicapped-related issues that were considered by the Congress, an analysis of the effects of bills passed by the Congress on the handicapped, measures not enacted, major regulations affecting the handicapped promulgated during the same period, and issues remaining to be dealt with are discussed. The bills and regulations considered during the period covered such topics as social security, housing, education, rehabilitation, health, appropriations, transportation, supplementary security income, medicaid, and social services.

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1655 STEDMAN, DONALD J. The state planning and advisory council on developmental disabilities. Mental Retardation, 13(3):4-8, 1975.

In 1969 Federal legislation was passed which mandated the establishment of a Council on Developmental Disabilities in each state to design, update, and submit a comprehensive state plan for services to the handicapped. Councils currently show wide variation in terms of organizational placement, including attachment to the governor's office; to the administering state agency; to an umbrella agency; or to a state agency which is not the designated administering agency. Based on observations of the current state councils, the developmental stages of state councils are characterized as 1) primitive, 2) competitive, 3) advisory-collaborative, and 4) affirmative -advocacy. Whether or not the councils are effective will depend on the extent to which state councils and agencies use ambiguities in the legislation to effect flexibility in development of unique and comprehensive plans.

Frank Porter Graham Child Development Center University of North Carolina Chapel Hill, North Carolina 27514

1656 MCALLISTER, JACK. From the perspective of the President's Committee on Mental Retardation. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975, pp. 129-134.

The President's Committee on Mental Retardation sees a need for substantial and fundamental reform in all of the systems of man, including the area of the aging and aged MR. The problem of elderly MRs is not a broad, separately identifiable social issue. Rather, good pieces of legislation which have been enacted in aging, transportation, and disabilities areas, and now Title XX in social services, can be orchestrated and programmed to meet the needs of elderly MRs without identifying a special population and coming up with a whole new cause. Labeling of MRs is a necessary evil of the funding system at present. If the growing and very effective group of consumers called the aged will join forces with the Associations for Retarded Citizens, which have been the most effective groups in the health field over the past few decades, a powerful alliance will have been formed to deal with the problems of both population groups.

President's Committee on Mental Retardation Washington, D.C.

1657 MORRIS, ELEONOR. From the perspective of the Administration on Aging. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held Ann Arbor, Michigan, April 8-10, 1975, pp. 135-141.

The Administration on Aging, which has been involved with Titles I and II of the Older Americans Act, is currently involved with the new Title III as well as with other service programs designed to meet the needs of the elderly. Title I contains a set of objectives which essentially for the first time put a Bill of Rights for older people into law. Title II set up the Federal Council on Aging, a body with both responsibility and some money to see that studies are conducted and to make recommendations to the Administration and the Congress, and the National Clearinghouse on Aging, an agency which is still under way. The new Title III is really part of the New Federalism, the concept that states and localities can do the best planning for their people. The Administration on Aging also implemented a nutrition program and has worked to improve transportation services for the elderly.

Office of Aging, Region II Office of Human Development Department of HEW Washington, D.C.

1658 LUCKEY, ROBERT E.; & NEMAN, RONALD S. The President's Panel recommendations -- today. Mental Retardation, 13(4):32-34, 1975.

A survey of administrators of state MR programs attested to the continued relevance of recommendations of the 1962 President's Panel for a national plan to combat MR. Responses, which were received from 76 percent of the states, indicated that all of the Panel's main recommenda-

tions are still highly important today. Specific items which were rated as most currently relevant tended to be the ones in which the greatest progress was perceived since 1962 (education vocation programs; provision of community facilities; legal rights; and public awareness). Substantial room for continuing progress in all areas was indicated. Recommendations for action programs for this decade were focused upon: deinstitutionalization and community services; preventive health measures and research; legal rights and advocacy; mandatory education services; funding MR services; and changing public attitudes. (2 refs.)

National Association for Retarded Citizens Arlington, Texas 76011

1659 FRIEDMAN, PAUL R.; & BECK, RONNA LEE. Mental Retardation and the law: a report on status of current court cases, December 1975. Washington, D.C.: President's Committee on Mental Retardation, 1975. 27 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED117913.

Seven new court cases regarding the legal rights of the MR are reported, as well as updated information on 39 previously reported cases. Cases concerned with commitment, classification, education, employment, guardianship, sterilization, treatment, voting, and zoning are analyzed, and the following cases are cited: Steward, et al. v. Philips, et al.; Pate v. Parham; White v. Director of Michigan Department of Mental Health; California Association for Retarded Children v. State Board of Education; Roebuck, et al. v. Florida Department of Health and Rehabilitation Services, et al.; Schultz v. Borradaile; National Welfare Rights Organization, et al., v. Weinberger, et al.; Burnham v. Department of Health of the State of Georgia; Carrole, et al., v. Cobb, et al.; City of Temple Terrace v. Hillsborough Association for Retarded Citizens, Inc. Sixty one closed cases concerned with architectural barriers, classification, commitment, custody, education, employment, guardianship, protection from harm, sterilization, treatment, and zoning are also discussed.

1660 Mental Retardation: The Known and the Unknown. Information as of February 1, 1975. Washington, D.C.: President's Committee on Mental Retardation, 1975. 118 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$6.01, plus postage. Order No. ED117869.

Minimum occurrence of disability, adequate and humane service systems, and assurance of full citizenship for the MR are discussed in the report of the President's Committee on Mental Retardation. Topics reviewed include the background, definition, prevalence, and incidence of MR. research relating to prevention, associations between MR and such conditions as Tay-Sachs disease, rubella, lead poisoning, and prematurity, social service systems such as health services and vocational training, and the right to education, right to treatment, and right to payment for work. The effect of legislation, competency questions, and attitudes on the rights of the MR is also addressed. The economic impact of vocational rehabilitation and education is reviewed and federal spending trends are analyzed.

1661 SIMCHES, RAPHAEL. Economic inflation: hazard for the handicapped. Exceptional Children, 41(4):229-242, 1975.

The spiraling of costs limits expansion and improvement of needed programs for MR children, and proposed solutions to inflationary problems have negative implications for the estimated 7 million handicapped children in this country. The continuous effort to obtain appropriate special educational programs has been buttressed by legislation and court actions, but dollar and personnel resources required to implement these policies are threatened by inflation and proposed budget cuts. Other aspects of programming which are endangered by economic problems and policies include competency-based teacher preparation, vocational training programs, and medical, dental, recreational, and counseling services. Additional dollars must be made available through governmental controls and enforcement machinery, infusion of federal dollars into programs for the handicapped, and revenue sharing. Special education may result in overall economic benefits through early remediation and the development of productive, tax-paying citizens. (11 refs.)

1662 KRAUSE, FRED J. President's Committee looks ahead to the year 2000. Education and Training of the Mentally Retarded, 10(4):307-309, 1975.

A comprehensive report on MR needs through the year 2000 is being prepared by the 21 citizen members of the President's Committee on Mental Retardation and its professional staff. The study, which will include historical backgrounds, reports of state activities, statistical data, and a detailed rationale for the recommendations, is based on material from regional forums, exchange of ideas with leaders of national organizations, and input from a group of "futurists." Recommendations of the report will reflect the current view of the MR as a human being capable of developing toward independence, and clear and consistent program guidelines will be presented for future development. Issues considered will include causes of MR and reduction of its occurrence, examination of current and alternative delivery systems, economic aspects, administrative and regulatory procedures, gaps between declared legal rights and their practical realization, and public attitudes toward MR. A summary of findings is expected in early 1976.

President's Committee on Mental Retardation Washington, D.C.

MILLER, J. R.; & GALLAGHER, R. P. The use of a Registry case load survey in predicting trends in rehabilitative needs for the handicapped. *Journal of Mental Deficiency Research*, 19, Part 2:101-106, 1975.

A special 6-year follow-up study of handicapped children reaching the ages of 7 or 14 in the year of follow-up was carried out to determine the level of residual disability in the caseload of the British Columbia Health Surveillance Registry. Information was also elicited regarding the extent of schooling difficulties encountered by the children surveyed. Of the total 10,689 cases surveyed, 68 percent of 7-year-olds and 65 percent of 14-year-olds had a residual handicap. Four percent of the 3,131 7-year-olds with a residual handicap and 3 percent of their 4,094 14-year-old counterparts were not attending school. There was a small gradual decrease in the percentage of residual disabilities from congenital defects in both

age groups over the 6-year period but no change in the percentage of residual disabilities in the categories of MR or nervous system diseases for either age group. These figures, together with prevalence statistics obtained through other Registry procedures, provide useful minimal data for planning rehabilitative facilities for the handicapped. (3 refs.)

British Columbia Health Surveillance Registry P. O. Box 34020 Postal Station D 828 West 10th Avenue Vancouver, British Columbia, V6J 4M3

1664 RAVENEL, LOUISE R.; & BUSH, ELIZA-BETH S. A legal framework: an outsider's perspective. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 4, pp. 68-78.

Although some progress has been made in implementing the recommendations on reform of the criminal process proposed by the President's Committee on Mental Retardation over a decade ago, the same recommendations are still appropriate. The major progress in the field of MR in the past decade has been the drastic change in the philosophical base for serving MRs from a policy of benevolent action towards the perpetual child to one of action on behalf of individuals with developmental potential and human and legal rights. In essence, therefore, there has been a trend towards normalization. At this point, normalization must be fostered by special attention to the sociolegal statutes and methodologies which prohibit MR citizens from enjoying the same human and legal rights as other citizens. Advocates for specialized population groups must continue to concentrate on fostering changes in basic law and its implementations. Realization of a totally individualized process within either the civil or criminal justice system is a distant goal, but it may be best achieved ultimately through advocacy on behalf of the MR citizen. (9 refs.)

Subcomittee on the Retarded Offender The President's Committee on Mental Retardation Charleston, South Carolina 1665 MORROW, CATHERINE C. A legal framework: an insider's perspective. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 3, pp. 54-67.

With all of its faults, prejudices, and delays, the criminal justice system into which the MR citizen charged with a crime is thrust offers strong protections to MR and normal defendants and offenders alike. In the pretrial (including arrest), trial, and post-trial (including sentencing) stages of the criminal process, methods are available by which the attorney for the MR accused person may reinforce the client's rights. The courts as presently constituted can be persuaded to take into consideration a defendant's MR. Thus, an exceptional offenders court would be unnecessary and even undesirable, for it would publicly label the MR defendant as a second-class citizen. Many MR persons accused of an offense can be defended successfully without mention of their MR. Although segregation of the MR before the bar is unnecessary and undesirable, MRs should not be incarcerated with non-MR prisoners. (8 refs.)

King County Legal Center for the Retarded Seattle, Washington 1666 LOTTMAN, MICHAEL S. A constitutional framework: the Justice Department as litigans. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 2, pp. 45-53.

Constitutional litigation has been a relatively new federal approach to the problems of MR and corrections. The major thrusts of Justice Department efforts in this area have been towards deinstitutionalization and to upgrade the programs, services, and conditions in MR and other facilities. The principle of due process would appear to protect the rights of MR offenders, but these individuals frequently fall between the cracks in the current institutional structure. Whereas an MR offender in an MR or juvenile facility has, at least theoretically, a right to treatment or habilitation (although enforcement of this right will require a massive effort that has hardly begun), an inmate of an adult penal institution may not even have this theoretical right to affirmative treatment. Further definition and clarification of the relationship between MR and criminal responsibility is needed so that people are not imprisoned because of their MR, and sweeping, across-the-board penal reform is needed to upgrade the treatment of MR persons who are jailed, for whatever reasons. (6 refs.)

PROGRAMMATIC ASPECTS - Community

1667 BROWNING, PHILIP L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, 349 pp. (Price unknown.)

The complexities associated with the rehabilitation of MR offenders are explored from the standpoint of professionals in the fields of psychology, rehabilitation, law, and the criminal justice system. A framework for understanding the naive or MR offender within the criminal justice system is provided, and the philosophy and goals of a recently coordinated effort by rehabilitation and corrections personnel to serve the needs of handicapped persons are discussed. (141-item bibliog.)

CONTENTS: Restitution or Revenge? (Norley); A Definitional Framework: Who Is the Retarded Offender? (Steinbock); A Constitutional Framework: the Justice Department As Litigans (Lottman); A Legal Framework: an Insider's Perspective (Morrow); A Legal Framework: an Outsider's Perspective (Ravenel & Bush); An Overview of the Government As Change Agent (Kirkland); An Overview of Rehabilitation Alternatives (Harbach); An Overview of Incarceration (Brelje); A Community Approach to Rehabilitation (Dennis); A Behavioral Approach to Intervention (McGovern); A Family Intervention Approach to Delinguent Behavior (Reid); Professional Short-Term Training As an Approach to Intervention (Foss & Beermann); Foundation for Action.

1668 KIRKLAND, MARJORIE. An overview of the government as change agent. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 5, pp. 112-121.

Federal programs dealing both with MR and with corrections are spotty and meager, but federal actions that have been taken have frequently had a positive impact. Deinstitutionalization of MRs who do not require the special resources of the institution is an important priority at the Department of Health, Education and Welfare, which has until now been the primary agency for all programs for MRs and some for corrections. Efforts involving even the Justice Department have been made to integrate a number of programs. The Department of Labor will act to prevent the exploitation of residents who for generations have carried on much of the work of institutions without pay or far below the minimum wage, by enforcing wage and hour laws. In addition, attempts are being made to inform police about the abrogation of the rights of MRs. Unfortunately, almost nothing is being done for the adult MR offender. The findings of a research project concerned with the diagnosis and treatment of MR offenders in correctional facilities have led to the formulation of recommendations on changes in the law and in criminal and juvenile justice procedures and on cooperative activities to prevent offenses on the part of the MRs. (9 refs.)

Division of Developmental Disabilities United States Department of Health, Education and Welfare Washington, D.C.

1669 HARBACH, ROBERT L. An overview of rehabilitation alternatives. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 6, pp. 122-141.

Investigation of existing treatment programs designed to promote the rehabilitation of the MR offender has revealed an uneven picture of deficiencies, on the one hand, and imminent reform, on the other. Correctional programming for the MR offender is greatly lacking, but new programs have been planned which will provide a more complete range of treatment methods. It is debatable, however, whether or not MR offenders

are generally recipients of such services as individual psychotherapy, group psychotherapy, milieu therapy, special and vocational education, and work and personal adjustment training. No matter how admirably administered an institution may be, the inevitable criminalizing influence of inmate subcultures found in any correctional institution still exists, and arguments abound regarding the advantages and disadvantages of separate facilities for MR offenders. Probation, community center programs, work-release programs, and short-term furloughs are all potentially effective means of reducing incarceration. Cooperative programming arrangements between vocational rehabilitation and correction agencies have yielded promising results. (18 refs.)

Rehabilitation Counselor Training Program University of Georgia Athens, Georgia

1670 DENNIS, H. FLOYD. A community approach to rehabilitation. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 8, pp. 164-178.

Prior to initiating a community-based treatment alternative for MR offenders, a statewide survey was conducted to estimate the number of MR offenders within juvenile correctional institutions in Tennessee. Following the survey, groups with MR, borderline, and average or above average levels of intelligence were compared on a wide range of characteristics. The picture that emerged from the families and homes of the youths, especially those in the MR group, was one of pervasive deprivation. On the basis of examination of the correctional facility records of the 3 groups, it appeared that the social training provided by the correctional schools was least effective for the MR children. Following a year of collecting extensive data on the 3 groups, a day program was commenced in Nashville that took every other Nashville boy sentenced to the Department of Correction who scored below average in intelligence. This alternative treatment approach for MR offenders was a success, and an act has been introduced for adoption to the Tennessee General Assembly as a result of it.

Institute on Youth and Social Development

John F. Kennedy Center for Research on Education and Human Development George Peabody College for Teachers Nashville, Tennessee

1671 BRELJE, TERRY B. An overview of incarceration. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 7, pp. 142-163.

The MR offender is doubly rejected -- by MR agencies because he is a criminal first and MR second, and by corrections agencies because he is not likely to benefit substantially from the rehabilitation and treatment programs offered in prison. The injustices perpetrated in prisons are often ignored, with lip service paid to the philosophy that the prison's purpose is to rehabilitate and correct. But while the deplorable conditions apply to all offenders, MR offenders have some special problems which make prison potentially even more devastating for them than for other offenders. The MR offender in prison frequently is not provided with conditions which are most appropriate for his welfare, and the likelihood of recidivism is high. Approaches which have been demonstrated to work must be supported in place of existing detrimental policies. (21 refs.)

Chester Mental Health Center Menard State Prison Chester, Illinois

1672 FOSS, GILBERT; & BEERMANN, LOUIS L. Professional short-term training as an approach to intervention. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 11, pp. 207-216.

The training of professionals in the criminal justice system in facts about MR, an intervention strategy which can be both preventive and rehabilitative, is a viable short-term action that has generally been overlooked. Short-term programs centered around the twin goals of prevention and normalization in training correctional professionals involved with MRs in the pretrial and trial stages of the judicial process will have the greatest impact on the problem of the disproportionate number of MRs within inmate populations. In addition, these

correctional professionals will be best able to facilitate the accommodation of the traditional judicial process and the MR individual. A whole range of materials is currently available for use in the short-term training of policemen, lawyers, judges, and probation officers. (11 refs.)

Rehabilitation Research and Training Center in Mental Retardation University of Oregon Eugene, Oregon

1673 Foundation for action. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Epilogue, p. 293-294.

Premises concerning the rights of the MR offender reflect the general consensus growing out of a national conference on MR and corrections. First and foremost, the MR offender should have the same rights as any other person similarly situated. Incarceration should take place only if an individual is imminently dangerous to others, and he or she should be protected within the correctional system against unreasonable risk of harm from fellow inmates and dehumanizing policies and against experimentation involving drugs or medical procedures. Both prisons and alternatives to incarceration should stress individualized approaches and provide the skills necessary to enable each individual to cope in society within the law in his or her preferred life style. The MR offender should become the concern of major social agencies and professional groups.

1674 Precis: long-term personal program coordination; summary of a report by Leopold Lippman to the Developmental Disabilities Council of New Jersey. Newark, New Jersey: Mount Carmel Guild, 1975. 28 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$2.06, plus postage. Order No. ED119449.

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New Jersey's organizational structure for personal program coordination should be modified to provide continuity of services to developmentally disabled persons. Current programs have administrative, categorical and geographic limitations, which could be alleviated by the establishment of local "one-stop human resources centers' to be

supervised by a state agency. These resource centers could then provide services in the areas of outreach and casefinding, information and referral, advocacy support, recordkeeping, followup evaluation, intervention, and life-long availability. Implications for administration, information dissemination, use and sharing, educational programs, and funding are considered.

1675 SCHULPS, ALLAN. The Establishment of a Center for Multiple-Handicapped Children. New York City: Office of Special Education and Pupil Personnel Services, 1975. 191 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$10.03, plus postage. Order No. ED117916.

The establishment of a center for multiply handicapped children in New York City is described. Topics discussed include: the role of the special education coordinator; selection, intake screening, and evaluation; the medical program; the role of the paraprofessional; experiences of a student teacher; toxonomic instruction; review of reading materials; adaptation of a social learning curriculum; speech and language programs; a class tribute to Dr. Martin Luther King; music activities; puppetry; the roles of social workers, guidance counselors, physical therapies, and occupational therapists. A project summary is also provided.

1676 Avenues to change: trainers manual. Arlington, Texas: National Association for Retarded Citizens, 1975. 98 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$4.67, plus postage. Order No. ED117909.

A trainer's manual provided by the National Association for Retarded Citizens to help state and local associations develop citizen advocacy programs is discussed. An overview is provided of the materials and equipment needed to prepare and conduct a workshop training session. Specific instructions and scripts are included for 8 workshop activities. An orientation to citizen advocacy and a discussion on applying citizen advocacy to the needs of the MR are considered in the manual, as well as information regarding the purpose and training sequences for each activity. Guidelines are offered for presenting audiovisual material and sending letters of invitation.

1677 An Assessment of the Needs of the Handicapped in Howard County. Maryland: Columbia Association, Office of Planning and Evaluation, 1975. 162 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$8.24, plus postage. Order No. ED111130.

The needs of the handicapped residents of Howard County, Maryland, were assessed by means of a survey gathering information on basic population characteristics, community services for the handicapped, and needed service improvements. In Howard County, 4.3 percent of the residents are handicapped, most commonly by health impairments, learning disabilities, and speech or orthopedic handicaps. Fifty four percent of the handicapped are of school age, 40 percent are adults, and 5 percent are preschoolers. Their needs include increased dissemination of information about services for the handicapped, supportive mental health services, and group residential housing. A citizen's committee for the handicapped is needed, along with a new residential living approach and coordination of a county-wide recreation program. Handicapped population statistics, types of handicapped services available. diagrams of architectural barriers, a review of the literature, and a description of a peer counseling program are included.

1678 FRANK, JEANNIE L. Normalization — "Marc, a young man I'll never forget." Mental Retardation, 13(3):25, 1975.

The success of normalization in a 19-year-old boy with Down's syndrome is demonstrated by a letter he wrote to a companion on a study mission in Israel. The independence, social skills, and cognitive skills achieved by the young man are attributed to his parents' treatment, expectations, and their belief in normalization at a time when institutional placement was usually advised.

Department of Pediatrics Drew-1 King Medical School Los Angeles, California

1679 Montana University. Deinstitutionalization and the Development of Community Based Services for the Mentally Retarded Youth of Western Montana. Horejsi, Charles R.; & Berkley, Ann B. Missoula, Montana, 1975. 104 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$5.70, plus postage. Order No. ED112594.

Eighty-six service providers and 9 social workers were interviewed, and 61 MRs and their parents were surveyed as part of the University of Montana's Project on Community Resources and Deinstitutionalization. The establishment of sheltered living arrangements was most often mentioned by service providers as a means of preventing institutionalization and depopulating the institutions. Community education and greater resources were identified by social workers as ways to increase public acceptance of community based services for MRs. Parents gave their opinions about their children's living situation, the lack of community services for the MR, and confusion over service terminology. Suggestions are offered for the improvement of services in the following areas: 1) planning, program development, and service coordination; 2) advocacy; 3) placement procedures; and 4) residential services, including foster homes.

Montana University. Deinstitutionalization and the development of community based services for the mentally retarded: an overview of concepts and issues. Horejsi, Charles R. Missoula, Montana: Department of Social Work, 1975. 64 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No. ED112606.

Concepts and issues concerning the development of community-based services for the MR and the practice of deinstitutionalization are reviewed, with emphasis on deinstitutionalization in rural areas. MR and developmental disabilities are differentiated, as are the concepts of decentralization, deinstitutionalization, and institutional reform. Normalization and legal action are among the issues discussed, and difficulties posed by the resistance of parents and economic interests are noted. Aspects of a comprehensive service system are described, including adherence to a developmental model, and the types of services provided, such as family support and child development services. Movements toward deinstitutionalization in Connecticut, Nebraska, and California are outlined.

1681 OSBORNE, ALLAN G., JR. Voting practices of the mentally retarded. Mental Retardation, 13(3):15-17, 1975.

Although MR individuals are allowed to vote in many states, through specific laws, informal rulings, or absence of regulations, there is a discrepancy between their rights to vote and actual voting practices. The percent of MRs who actually vote tends to be low, but various studies indicate that EMRs can and will exercise their right to vote if they receive proper education in voting procedures. Instruction should deal with the meaning of voting; the voter registration process; when voting occurs; and the actual voting procedure itself. It should include training in the use of voting machines, ballots, and other apparatus. Special educators on the secondary level have the opportunity to present relevant lessons on voting and citizenship. They should also demand that MRs not be denied the right to vote. (1 ref.)

Pinecrest Elementary School Bellingham, Massachusetts

1682 CELAND, C.; MANASTER, G.; KING, M.; & ISCOE, I. The mentally ill and mentally retarded via adjectival descriptions. Mental Retardation, 13(5):28-50, 1975.

Two hundred and fifteen faculty members and advanced students in special education and educational psychology were asked to describe mentally ill and MR persons by completing two Adjective Check Lists (Gough, 1952). Adjectives used to describe a mentally ill person were almost exclusively in the realm of affect, while adjectives describing MR encompassed affect, motor skills ability, and cognitive capacity. Difficulty in discriminating between the 2 diagnostic categories may relate to the overlapping perception of an element of emotionality in both disorders. While differences were not significant, MR adjectives were both more derogatory and more positive than adjectives describing the mentally ill. Results suggest that imposters of mentally ill persons could "pass' more often than people posing as MR persons. (19 refs.)

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Department of Special Education University of Texas Austin, Texas 78712 1683 GOLDMAN, EDWARD R. State model for community services. Mental Retardation, 13(5):33-36, 1975.

A regional client decision agency, grounded in state law, is the core of a proposed model for community based services to MRs. The proposed agency would not provide direct services but would offer clients options of community or institutional service delivery. An independent agency serving an area including 1 million people, the client decision center would be accountable to a separate state agency; however, it would remain the single agency responsible for persons and families in the service system. Functions would include legal and citizen advocacy protective services, funding, monitoring, planning, fiscal accountability, service delivery, and continuity of care and services. Fragmentation of services would be avoided, and competition between institutional and community service systems would be eliminated. A client decision center on the local level is a practical application of currently popular social, political, and economic theories. (7 refs.)

Cumberland-Perry ARC 100 Louther Street Carlisle, Pennsylvania 17013

1684 BAUCOM, LINDA D.; & STEDMAN, DONALD J. A survey of the membership of state and territorial developmental disabilities councils: relevant characteristics and observations, 1974. Mental Retardation, 13(5):12-15, 1975.

Characteristics, interests, and opinions of 576 members of state and territorial Developmental Disabilities Councils were examined through a 24-item questionnaire. Data indicated that the average Council member is a 47-year-old, married white male currently living in a city of 150,000 people. Although he is not likely to be handicapped, there is a 50 percent chance that a member of his family is handicapped. The average member has attended graduate or professional school, was appointed to the Council about 2 years ago, and has attended 78 percent of the meetings. The overall sample indicates that 98.8 percent are primarily interested in MR and consider education and training major priorities. Other interests focus on diagnosis, evaluation, and treatment. Satisfaction with the operation of the developmental disabilities councils was expressed by 92 percent of the respondents. (1 ref.)

Developmental Disabilities Technical Assistance System Frank Porter Graham Child Development Center University of North Carolina Chapel Hill, North Carolina

1685 Avenues to change: a coordinator's guide for training citizen advocates. Arlington, Texas: National Association for Retarded Citizens, 1975. 119 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$6.01, plus postage. Order No. ED117908.

A Coordinator's Guide for Training Citizen Advocates, which was developed by the Association for Retarded Citizens, and is intended for coordinators of citizen advocacy programs for MR persons, provides an overview of training sequence and procedures, suggestions for 2 training sessions, and topics for follow-up activities. Training objectives are listed, including defining the role of citizen advocates, and the steps involved in screening, training, matching the advocate to the MR protege, and providing follow-up in-service training are analyzed. Two sample training sessions are described, including information on such topics as a basic orientation to MR, the normalization principle, community resources, and resource materials for the citizen advocate. Objectives, references, approaches, and materials are suggested for follow-up training on such aspects as current trends in legislation and poverty and MR.

1686 CULL, WILLIAM H. Kentucky statutory law. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part I: Mentally Retarded Offenders in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, 1975, Chapter 5, pp. A49-A59.

A definite need exists to alter Kentucky's present system for commitment of the MR offender and for his habilitation. At the least, a more definite procedure is required to ensure consistency in the enforcement of the process. Until the enactment

of the new penal code, Kentucky law had no specific and comprehensive provisions for dealing with the MR offender in the criminal justice system. Even with the new statutory provisions, however, the MR offender is likely to be abused by the system. For those who have not yet been incarcerated, a more proficient testing mechanism is needed to determine competency. For those already in the correctional system, a better appreciation of the problem, a more specialized system of assigning institutional positions, more emphasis on education of the MR inmate, and a more effective means of removing the SMR inmate to a more suitable facility would be helpful.

right to rehabilitation. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions. Part 1: Mentally Retarded Offenders in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, Chapter 6, pp. A61-A81.

With the increased acceptance of modern penological theory and the increased recognition of and concern for the protection of prisoners' rights, 4 legal arguments have been advanced in support of a right to rehabilitation for incarcerated offenders. Three arguments are constitutional in nature, being based upon the Cruel and Unusual Punishment Clause of the Eighth Amendment and the Due Process and Equal Protection Clauses of the Fourteenth Amendment. The fourth argument would base the right to rehabilitation on statutory language. These developments have particular implications for the MR offender.

rights to Kentucky's mentally retarded offenders. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part 1: Mentally Retarded Offenders in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, Chapter 7, pp. A83-A92.

Substantive data, Kentucky statutes, and case law favor the legal right of the MR to treatment and constitute the basis of a legal argument for the development of specialized treatment facilities and programs for MRs in Kentucky's correctional system. Kentucky correctional institutions knowingly house a significant number of MR persons who have no real access to appropriate treatment opportunities and who are abused by criminal incarceration. MR persons who are involuntarily committed by the courts to mental health facilities have a right to rehabilitative treatment. Kentucky corrections must either develop specialized treatment for MRs or transfer them to health services, if the incarceration of these offenders in Kentucky's prisons is not to violate their individual Constitutional rights.

1689 REUTHEBUCK, GEORGE L.; & PAPE, NANCY. Introduction. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part II: Mentally Retarded Offenders in Juvenile Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, Chapter 1, pp. B3-B9.

The current period of emphasis on the relationship between MR and criminal behavior follows a period of early enthusiasm (1890-1920), in which MR was first categorized with crime, insanity, and degeneracy as resulting in deviancy and was subsequently regarded as a separate but major cause of crime and delinquency, and a period of denial and neglect in which society rejected the idea that most offenders were MR. At the present time, the AAMD stresses the current functions of the individual in its definition of MR. The cause of MR is disregarded. Both intellectual functioning and adaptive behavior must be considered retarded before an individual may be classified as MR. Although MR lends itself to psychological testing, the present conceptions of diagnostic tests contain many inadequacies. Outside the test situation, however, there is an inability to focus on and assess the level and quality of problem-solving behavior. Empirical guidelines for standardized testing procedures with carefully documented normative data seem to be needed, therefore, in order to determine intellectual status.

1690 REUTHEBUCK, GEORGE L.; & PAPE, NANCY. Current provisions. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and a

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Juvenile Correctional Institutions, Part II: Mentally Retarded Offenders in Juvenile Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, Chapter 2, pp. B11-B29.

Although no single overall problem exists with regard to the current services and facilities available to juvenile MR offenders, several recommendations may alleviate a number of problems associated with these individuals. Juvenile courts appear to commit juvenile offenders to the Bureau for Social Services in a manner similar to higher courts that commit MRs to the Bureau for Health Services on an involuntary basis. Upon being adjudicated by a juvenile court, a child may be sent to 1 of 2 reception and diagnostic facilities, where he receives social, educational, vocational aptitude, physical, and psychological diagnostic tests. Appropriate medical, dental, and psychiatric services are also provided. A child leaving a reception center may be returned to his home, to a foster home or community-based home, to a treatment facility operated by the Bureau for Social Services or, in cases of extremely MR children, to a residential facility operated by the Bureau for Health Services.

1691 REUTHEBUCK, GEORGE L.; & PAPE, NANCY. Findings. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part II: Mentally Retarded Offenders in Juvenile Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, Chapter 3, pp. B31-B36.

The main problems associated with juvenile MR offenders in the Kentucky correctional system lie in the areas of their identification, facility placement, and educational level. At best, IQ scores may be obtained, although they alone may not be sufficient to determine MR. The Bureau for Social Services operates 7 treatment facilities for adjudicated delinquents, but only 1 facility is staffed to accept MR juveniles. Every treatment facility has reported a number of MR children, however. Attempts by the facilities to separate MRs from their more sophisticated peers are rarely made. Consequently, MRs may be deprived of specialized treatment and handling measures. MR children may tend to isolate themselves, and frustration and lowering of motivation may result.

Statistics indicate that children at the reception centers perform on an academic level far below that of average school children and that intense academic training is needed.

1692 REUTHEBUCK, GEORGE L.; & PAPE, NANCY. Recommendations. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part II: Mentally Retarded Offenders in Juvenile Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, Chapter 4, pp. B37-B40.

The adjudication process for juvenile MR offenders, their placement in correctional facilities, and their treatment staff all require improvement. An alternative to the present institutional settings should be established to divert the MR juvenile offender from unnecessary participation in the juvenile justice system. A subnetwork should be established within the juvenile justice system to deal solely with the problems of MR offenders. The Department for Human Resources should make an intensive effort to communicate the special needs of these offenders to the communities. Ideally, a new facility should be constructed for MR offenders that would provide a normalized residential situation and would provide more treatment for a child's MR than for his antisocial behavior. Emphasis in any facility for MRs should be on special education and vocational training. Both staff training requirements and salaries should be maintained at an appropriately high level.

1693 Precis: Long-term personal program coordination. Summary of a report by Leopold Lippman for the Developmental Disabilities Council of New Jersey, 1975. 26 pp.

The findings from an exploratory study of the case management services offered at present by major systems in New Jersey to the developmentally disabled person and his family are presented, and recommendations are made. Administrative, agespecific or otherwise categorical, and geographic limitations of existing programs are outlined. A redesigned structure is proposed at the local and statewide levels. The use and sharing of information among official agencies is discussed, and the communication and funding aspects of the proposal are considered. (63 refs.)

1694 LIPPMAN, LEOPOLD. Long-term personal program coordination. A report on case management services for developmentally disabled persons in New Jersey. Planning study, New Jersey Developmental Disabilities Council, 1975, 81 pp.

Existing case management services offered by major systems in New Jersey to the developmentally disabled person and his family are described on the basis of findings from an exploratory study, and a written model of a longitudinal, unified case management system is developed that includes recommendations for improvements in the present aggregation of systems and suggestions for effecting appropriate changes. Statewide and local services are outlined, and redesigned programs for both structures are proposed. Appendix A lists the New Jersey agencies and organizations visited. Appendix B describes the Homestart Program in Elkhart County, Indiana. (63 refs.)

1695 HEIN, HERMAN A.; CHRISTOPHER, M. CHRISTINA; & FERGUSON, NORMA N. Rural perinatology. *Pediatrics*, 55(6):769-773, 1975.

A visitation program aimed at assessing and improving care in the small community hospital was undertaken within a pilot perinatal care program developed by pediatricians and obstetricians in Iowa. Seventy-two hospitals were visited by a perinatal team, and information regarding care practices and deficient areas was gathered. Ninety days or more after the initial visitation, a questionnaire was sent to each hospital. Prior to the visitation program, a number of critical care practices — among them, adequate availability of proper resuscitation equipment, use of vitamin K,

and ensuring adequate infant warmth -- were marginal at best. Follow-up results from the questionnaire indicated an improvement in the majority of cases. A community-based educational approach appears to be a reasonable way of reaching the practicing physician and nurse and of keeping them abreast of current care practices. Programs similar to the lowa program could be utilized successfully in other rural states or regions to improve basic perinatal care. (11 refs.)

Department of Pediatrics University Hospital Iowa City, Iowa 52242

1696 Dangerous offenders, *Lancet*, 2(7940):856-858, 1975. (Editorial)

The Butler Committee on Mentally Abnormal Offenders, charged with investigating the difficulties encountered by doctors and others trying to operate existing provisions for the humane and safe management of mentally abnormal offenders, has made thoughtful and worthy recommendations concerning criminal responsibility in the presence of mental disorder or severe defect, the management of dangerousness, and the nature and relevance of treatment in personality disorder. To provide safeguards against the risk that is implicit in rehabilitation, the Committee has made recommendations which, if enacted, would provide a stepping-stone between the special hospital and the mental institution and between there and outside life for certain categories of patients capable of rehabilitation. At present, little progress has been made in implementing recommendations and any massive injection of money into the prison system within the next 10 years is highly improbable. (2 refs.)

PROGRAMMATIC ASPECTS - Residential

1697 SLOAN, WILLIAM; & LEVITT, LEROY P. Patient workers. Mental Retardation, 13(6):22-23, 1975.

Experience in Illinois has demonstrated that discontinuance of maintenance work by patients in MR institutions (as mandated by Executive

Order in 1974) is professionally sound, administratively feasible and fiscally economical. Although there was initial staff resistance to the idea of having no patient workers, anticipated problems did not materialize. A series of discussions with the staff dealt with rationalizations and misgivings about the absence of workers and helped the staff

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accept a concept of patient work which is based on adaptive behavior specifically geared to ameliorating the areas of major impaired functions.

Illinois Department of Mental Health/Developmental Disabilities Chicago, Illinois

1698 Texas Technological University. The Hearing Impaired Mentally Retarded: a Survey of State Insitutions for the Retarded. Monograph No. 4. Brannan, A. Clark; et al. Lubbock, Texas, 1975. 90 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$4.43, plus postage. Order No. ED106994.

Texas state institutions for the MR were surveyed to gather data concerning the hearing impaired MR (HI/MR). A review was made of current information on hearing impairment and MR, including its diagnosis and related programming. A total of 75 percent of the institutions surveyed responded and their responses were analyzed to provide data on the following subjects: 1) the operation of selected programs for the HI/MR residents; 2) services available to HI/MR residents; 3) characteristics of HI/MR residents; 4) procedures for diagnosis and evaluation of HI/MR residents; and 5) prevalence of HI/MR persons in institutions for the MR. Findings indicate that approximately 9 percent of the population of the institutions was hearing impaired, and only 48 percent of the institutions responding had a distinct program for this group. Thirty two percent of the institutions used puretone results to identify hearing impairment, 22 percent used functional need, and 26 percent used both, while the others used several criteria. Suggestions are offered to facilitate programming for HI/MR persons.

1699 MCCORMICK, MARK; *BALLA, DAVID; & ZIGLER, EDWARD. Resident-care practices in institutions for retarded persons: a cross-institutional, cross-cultural study. American Journal of Mental Deficiency, 80(1):1-17, 1975.

The Child Management Inventory was used to assess institution-oriented and resident-oriented care practices for MRs in 19 institutions in the

United States and 11 institutions in a Scandinavian country. The inventory indicated that living units in the Scandinavian country were more residentoriented than those in the United States (as represented by institutions within 1 small northeastern state.) The most institution-oriented practices were found in large central institutions. the most resident-oriented practices in group homes, and large and small regional centers fell between these extremes. These differences pertained to both countries, with care practices generally homogeneous within type of institution. More institution-oriented practices were also found in living units for SMRs, Institutionoriented practices were associated with large living unit size, but cost per resident per day, number of aides per resident, and number of professional staff per resident were not predictive of care practices. (31 refs.)

*Department of Psychology Yale University New Haven, Connecticut 06511

1700 MULHERN, THOMAS J. Survey of reported sexual behavior and policies characterizing residential facilities for retarded citizens. American Journal of Mental Deficiency, 79(6):670-673, 1975.

A survey of administrators of 82 residential facilities for MRs revealed marked discrepancies between sexual behavior reported to occur in such facilities and adminstrative policies governing such behaviors. Although 70 percent of the respondents endorsed a delineated set of guidelines for sexual behavior among residents, only 23 percent reported that their institutions had such guidelines. Other areas of discrepancy encompassed tolerances for specific sexual behavior and administrator's attitudes about what these tolerances should be. Although a large majority reported sexual behavior which they thought should not be permitted, a sizeable minority noted restrictions against behavior which they thought should be allowed. The problem of sexual frustration among MRs was clearly recognized, but the only forms of sexual release which the majority endorsed were private masturbation and brief public and private kissing. (2 refs.)

Diagnostic and Evaluation Unit Albert P. Brewer Developmental Center P.O. Box 8357 Mobile, Alabama 36608 1701 KOPCHICK, GEORGE A., JR.; ROM-BACH, DAVID W.; & SMILOVITZ, ROBERT. A total communication environment in an institution, Mental Retardation, 13(3):22-23, 1975.

A program of simultaneous communication (sign language and talking) was successful in increasing the language level of 11 nonverbal MRs, including 8 Ss with severe hearing loss who had a mean length of institutionalization of over 20 years. The 24-hour total communication environment was designed to stimulate language and communication and to provide a tool for increasing interpersonal communications. The program was implemented by 12 child care aides who received training in a simple sign language relevant to the setting in a 2-week program. The institutional environment was structured in a manner which enabled aides to reward attempts at communication. At the end of 6 months, patients exposed to the programs increased their language level by an average of 20 months. Three Ss began to use short phrases. Control of environment was a significant factor in promoting language use. (5 refs.)

Leo Kanner Speech and Hearing Center Rosewood Hospital Center Owings Mill, Maryland

1702 AANES, DAVID; & WHITLOCK, AMY. A parental relief program for the MR. Mental Retardation, 13(3):36-38, 1975.

A parental relief program which offers temporary educational services or crisis intervention to MR children has been implemented at the Fergus Falls (Minnesota) State Hospital. Review of data from 36 individuals discharged from the program indicated that the average length of stay was 60 days; the majority of individuals came from family homes; and the most frequent reason for placement was the family wish for a vacation. Seven individuals were admitted to learn social or vocational skills, and 5 persons were admitted because of illness in the family. In 5 instances the parental relief program appeared to be utilized as a means of admitting MRs on a temporary basis while parents were deciding about permanent institutionalization. A flexible parental relief program is an important supplement to community services.

1703 WOLF, LUCILLE C.; & WHITEHEAD, PAUL C. The decision to institutionalize retarded children: comparison of individually matched groups. Mental Retardation, 13(5):3-7, 1975.

Factors which influenced institutionalization of MR children were assessed through a comparison of 24 institutionalized children and 24 children matched for sex, socioeconomic status, I.Q., and diagnostic category who remained at home. Significant factors in determining the course of institutionalization were the sex of the child, with more males than females institutionalized; the amount of disruption the family perceived the child as causing; the mother's age, with institutionalized children having younger mothers; and the quality of the marital relationship, with more poor marriages characterizing parents who institutionalized their children. Factors not examined in this study may influence the decision to institutionalize MR children. (20 refs.)

Children's Psychiatric Research Institute London, Ontario, Canada

1704 BLINDERT, H. DIETER. Interactions between residents and staff; a qualitative investigation of an institutional setting for retarded children. Mental Retardation, 13(5):38-40, 1975.

Although a high frequency of interactions between teachers and learners seems to be important in effecting learning, observations of an institution for the MR indicate that the setting did not provide the children with sufficient occasions for learning. Interactions between staff and patient were observed in a room set up for this purpose. The average number of interactions between a staff member and a child was less than 1 per time period of 10 minutes. Interactions that did occur took place in the form of physical manipulation and required the staff to intervene. For types of interactions in which teaching and learning occur, records indicated a mean per patient of 0.58 interactions in 10 minutes, with a mean of 2.4 staff members presented. All the observed situations seemed to present the necessary ingredients for interactions conducive to teaching and learning, including a relatively high ratio of attendants to children (2.4 attendants for 7.6 children). (2 refs.)

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1705 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. Conclusion. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 10, pp. 106-117.

The experience at Gatewood indicates the need to develop an understanding of the network of services that are required by the returning state school patients (and other MR adults) while carefully avoiding the dangers of overprogramming, which can lead to a situation in which MR adults never learn to be self-reliant. The residents of Gatewood themselves demonstrate the complexity of establishing and coordinating services and of creating a new model of the MR adult in the community. Implicit in the concept of normalization, one of the bases of a community care services model for MRs, is the sociological generalization that the social surroundings in which people live will deeply influence their opportunities to lead conventional lives. The model of the MR person requires an added element, a conception of the person-as-actor, one who is both influenced by others and who, while he is present, influences others who may or may not know much about him. Future research on resettlement could identify the characteristics of MRs resettled from state schools and could make precise determinations of the relationship between these traits and success in community living. (4 refs.)

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1706 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. Responsibility and self-reliance. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 8, pp. 83-92.

Among Gatewood residents, movement towards greater readiness for self-reliance and limited independence became apparent. Although such major decisions as vocational rehabilitation placement were still being made by the staff, residents' personal decision-making was increased. Residents were not permitted to be responsible for all aspects of self-care at Gatewood. The educational program at the facility focused on practical

learning, such as recognition of different coins, but it did not include training in skills necessary for independent community living. Vacuum cleaning and lawn mowing were taught because of the need for labor in these areas, but cooking, marketing, and eating in restaurants were not, since meals were prepared by the Gatewood staff without extensive involvement of the residents. While movement out of Gatewood did occur, it was not based on extensive planning designed specifically to enhance each resident's adaptive and social skills in the community.

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1707 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. Social participation in the larger community. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 9, pp. 93-105.

Easy access to the larger community presented both benefits and disadvantages to the residents of Gatewood and staff members at the facility. The workshop represented a place where purely sociable interaction occurred. Residents developed close relationships with peers and sometimes would go off with a companion to areas of the city where they could disidentify with being MR. But Gatewood residents used the community in conjunction with their peers substantially less often than they used it either on their own or with staff, and they rarely established informal social relationships outside of the social establishments (the residence itself and the workshops) in which they were regarded as participating members. Some men began to use alcoholic beverages, an activity traditionally opposed for MR persons. Although there were few opportunities for Gatewood residents to feel part of an ongoing social experience, the city provided a place for the MR adults to be somebody by virtue of their new-found normality. Some residents acquired aspirations for more independent living arrangements and for competitive employment, and 2 residents have already achieved these goals. (5 refs.)

Albert Einstein College of Medicine Yeshiva University Bronx, New York 1708 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. Reactions to resettlement. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 5, pp. 48-57.

Gatewood residents who had been transferred from state schools were questioned upon relocation, 7-10 months later, and 16-20 months after resettlement concerning their attitudes towards state schools and Gatewood, their aspirations, and their recognition of opportunities in community living. Upon moving to Gatewood, residents appeared enthusiastic about the facility. After living there for 7-10 months, a distinct improvement in the quality of their lives was also recognized. Whereas 94 percent of the respondents mentioned negative aspects of the state schools, such as fighting with other residents and poor treatment by staff, among other problems, only 58 percent listed negative aspects of Gatewood, such as fighting with other residents. After the second interview, there was a 15 percent increase in positive responses concerning Gatewood. A trend towards expression of more neutral statements was noted 15 months after resettlement at Gatewood, possibly as a result of increasing desires rather than increased dissatisfaction. A change towards selfinitiated behavior and a lessening of interest in work may have been the result of the 6-month period of inactivity at Gatewood preceding placement in sheltered workshops.

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1709 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. New experiences in living. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 6, pp. 58-74.

The new experience of working and living in the community gave Gatewood residents a chance to become more self-reliant and interdependent with those who were similarly situated. Residents were able to participate in new and more demanding personal relationships involving the cooperation and approval of other residents and had an opportunity for informal cross-sex social contacts. Relations with Gatewood aides were much more

informal than relationships with attendants at the state schools. While Gatewood staff were regarded as less materially rewarding than state school staff, they were also much less punitive. Not only was living at Gatewood made more informal by the physical arrangements and social contacts available between residents and staff, but the location of the facility also encouraged the use of community resources. The workplace functioned to maintain existing relationships as well as to establish new ones, and it became a great source of pride and satisfaction for Gatewood residents. (1 ref.)

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Albert Einstein College of Medicine Yeshiva University Bronx, New York

1710 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. The origins of Gatewood. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 3, pp. 24-37.

Gatewood was planned as a formal organization constituting a stable association of persons engaged in concerted activities directed towards the attainment of beneficial social relationships between staff and residents. The planners were concerned with developing an environment where people who could not fully care for themselves could receive needed services both on the premises and outside, and where the staff would ensure that these services were arranged for and received by residents. Unfortunately, recruitment, selection, and training of staff represented continuing problems for the director. Once established as an operating facility, Gatewood was no longer solely dependent upon the regional developmental disabilities service for continuous approval. It had achieved some stability as a managed community and had reached a point where internal relations among members and contacts with outside agencies and the larger urban environment had become crystallized. (4 refs.)

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1711 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. The social organization of Gatewood. In: Birenbaum, A.; & Seiffer, S.

Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 4, pp. 38-47.

The social roles of the staff and residents at Gatewood underwent a transition from separate and "unequal" entities to an ultimate social division in which staff and residents became aware of the differences in social networks in which they participated as well as of their common linkage to Gatewood. The organization of Gatewood was based initially upon the nursing home model, a concept particularly inappropriate for MR adults who were physically able to do things for themselves and whose major desires were to work and earn money. Before workshop placements were made available, some recreational activities were introduced, and support activities were upgraded in order to deal with the problem of idleness. Once residents became affiliated with workshops, fewer incidents were reported which required staff intervention, internal control was easier to maintain, and the staff became increasingly limited to primary instructional tasks related to individual adaptation to the larger community. An implicit definition of community membership developed among residents based upon participation in efforts to develop shared norms of identity and action and to deal with transgressors. (1 ref.)

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1712 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. The social life of adult state school patients. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 2, pp. 11-23.

MR adults from state schools who are currently living at Gatewood expressed their views concerning the social relationships which they entered with fellow patients and staff members at the state schools. Half of these adults had worked while at the state schools, for the most part caring for and feeding less able persons, cleaning the ward where they lived, or doing odd jobs. Twenty percent said they did nothing during the days at the state schools or watched television. For most of the group, contact with the broader community outside of the state school was limited to visits by

or to parents. The development of interpersonal relations between residents and attendants was made difficult by the conditions of the staff's work. Former patients often expressed their sense of self in terms which denied their association and identification with those who were less able and those who could not care for themselves. These patients considered their relationship with attendants to be the most salient relationship in their lives. The asymmetrical, compartmentalized, and impersonal qualities of this relationship were its most significant aspects. (12 refs.)

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1713 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, 143 pp. (Price unknown.)

The experiences of 63 women and men who left 3 large and isolated state schools for MRs and went to live at a community residence called Gatewood are described. The problems inherent in the transition to community living, responses to resettlement, and resultant changing relationships are discussed. Directions for further research in the area of resettlement of MR adults are indicated. Appendix A reviews the problems of interviewing MR populations and the role of the interviewer. Appendix B contains the questions asked of Gatewood residents and the background data that were eathered.

CONTENTS: The Problem of Residential Care for MR Adults; The Social Life of Adult State School Patients; The Origins of Gatewood; The Social Organization of Gatewood; Reactions to Resettlement; New Experiences in Living; The Family and Its Surrogates; Responsibility and Self-Reliance; Social Participation in the Larger Community; Conclusion.

1714 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. The problem of residential care for mentally retarded adults. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 1, pp. 1-10.

A project involving the movement of MR adults into a community (Gatewood) from large and isolated state schools was undertaken to assess the impact of environmental social change on adaptive behavior and social skills and, more broadly, to determine optimum directions of future social policy. Some students of residential care have found that opportunities for stimulation are related more to the operating practices of these organizations than to abstract aspects of institutions, such as size and isolation. Contact with staff and patient interaction have been shown, at least among MR children, to have a substantial influence on behavior. Through participant observation and standardized open-ended interviews conducted during the residents' first week at Gatewood, 7-10 months later, and 7-10 months after the second interview, data were collected on the experiences of the resettled individuals and on the effect of resettlement on the behavior of MR adults. (22 refs.)

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1715 OCONNOR, GAIL; & SITKEI, E. GEORGE. Study of a new frontier in community services: residential facilities for the developmentally disabled. Mental Retardation, 13(4):35-39, 1975.

An initial profile of residential facilities for developmentally disabled persons emerged from a nationwide survey of community residences. The mailed survey indicated that most of the facilities were relatively new, with 75 percent in existence only 5 years prior to the study. Other findings showed that: 1) facilities were located primarily in residential areas (75 percent); 2) funding was inadequate; lack of individualized client programming and training and maintaining of staff were primary concerns of operators; 3) almost half the facilities were nonprofit and privately run; and 4) three-fourths of the facilities served developmentally disabled clients only. Although over half of the respondents indicated that "personal interests" were motivating factors for opening such facilities, multiple forces were frequently reported. One-half of the residents had previously lived in institutions. Cooperation between operators, residents, and community citizens is vital if facilities are to achieve positive results. (16 refs.)

1716 MCLAIN, RICHARD E.; SILVERSTEIN, ARTHUR B.; HUBBELL, MIMI; & BROWNLEE, LINDA. The characterization of residential environments within a hospital for the mentally retarded. Mental Retardation, 13(4):24-27, 1975.

Two instruments designed to determine the objective characteristics of the treatment milieu were administered to selected staff on wards within a hospital on 2 occasions as part of an ongoing study to identify differential effects of various residential settings on the development of MRs. Both questionnaires -- Characteristics of the Treatment Environment (CTE) and the Residential Management Survey (RMS) - differentiated among treatment programs with varying therapeutic goals and among wards within programs. Staff responses to the instruments were only minimally related to their demographic characteristics and employment history. Scores of both the CTE and RMS remained relatively stable over an 8-month period. The sensitivity and reliability of these instruments suggest that they have promise for determining the differential effects of various residential settings. (19 refs.)

Pacific-Neuropsychiatric Institute Research Group Box 100-R Pomona, California 91766

1717 WILSON, WILLIAM CLAUDE. An analysis of applicants and residents of a state institution for the mentally retarded. Dissertation Abstracts International, 36(6):3574A-3575A, 1975. Available from Xerox University Microfilms, Ann Arbor, Michigan 48106. Order No. 75-28,692.

Data were collected on children between the ages of 0 and 19 years who were in residence at or on the waiting list for Los Lunas Hospital and Training School (LLHTS) in New Mexico. Data were obtained from a questionnaire given to parents and pertained to demographic characteristics and perceptions of the child's present functioning level as well as to desired future program possibilities. Data were analyzed in 2 phases: phase 1 concerned descriptive baseline data of questionnaire respondents, and phase 2 entailed hypotheses testing for comparative analysis of waiting list and resident children. Results of phase 1 indicated existing differences

between waiting list children who came from homes in which Indian dialect was spoken and children from homes in which either Spanish or English was spoken. Analysis also revealed that parents had varied opinions regarding preferred program placement for their children, ideal residential placement, and length of stay at LLHTS. Results of phase 2 showed a disproportionate number of waiting list children being represented by children from homes in which Indian dialect was the predominant language when compared with children from Spanish-speaking or English-speaking homes. Resident children were expected to remain at LLHTS for a longer period of time than waiting list children.

University of New Mexico Albuquerque, New Mexico

1718 Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions. Cull, William H. (Pt. 1: Adult Offenders); Reuthebuck, George L.; & Pape, Nancy (Pt. 11: Juvenile Offenders). (Research Report No 125.) Frankfort, Kentucky, 1975, 193 pp.

The treatment and care of MR adult and juvenile offenders in Kentucky correctional facilities are evaluated. Inmates are discussed with regard to educational levels, parole status, legal rights, and available facilities and programs. Special problems associated with MR juvenile offenders are reviewed. The segregation of MR and non-MR offenders and the consequences of this action are also considered. (6 refs.)

CONTENTS: Part I: Mentally Retarded Offenders in Adult Correctional Institutions (Cull): Findings and Recommendations; Inmate Population Data; State Surveys; Inmate/Staff Survey Data; Kentucky Statutory Law; Legal Trends toward a Right to Rehabilitation; The Denial of Legal Rights to Kentucky's MR Offenders; Proposed Treatment Plan; Part II: Mentally Retarded Offenders in Juvenile Correctional Institutions (Reuthebuck & Pape): Introduction; Current Provisions; Findings; Recommendations.

1719 CULL, WILLIAM H. Proposed treatment plan. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part I: Mentally Retarded Offenders in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, Chapter 8, pp. A93-A96.

A proposed new maximum security institution is to house MR offenders in one of its program units and borderline (IQ 70 to 85) inmates in another program unit. Before this plan was adopted, 2 major alternatives were evaluated but subsequently rejected. The transfer of all MR inmates to the Department for Human Resources had initial appeal, but there was no guarantee that this Department could handle them properly. The proposal that trained staff in special education be hired and that one of LaGrange's proposed 3 units be used for MR offenders was rejected on the grounds that MR offenders should be totally separated from the remaining institutional population. It is essential for the new facility to be planned in accordance with the standards published by the Accreditation Council for Facilities for the Mentally Retarded. Moreover, effective follow-up community programs must be devised for MR offenders following their release from corrections.

1720 CULL, WILLIAM H. Inmate/staff survey data. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part I: Mentally Retarded Offenders in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, 1975, Chapter 4, pp. A35-A47.

Approximately 290 inmates and 130 staff from the 7 institutions in the Kentucky correctional system were surveyed concerning their opinions on the presence of and the problems created by MR offenders and the comparative accessibility to rehabilitative programs of offenders with below average IQs and those in the normal range. More than 70 percent of the inmates and staff felt that the Kentucky correctional system had no treatment programs oriented to the special needs of MR offenders, assigned MRs to menial maintenance jobs, and needed a new special facility which would provide compensatory treatment programs for MRs, Between 62 and 85 percent of correctional staff felt that MR offenders did not constitute a security problem. In contrast, they believed MRs were more likely to be the targets of sexual and physical abuse within the institutions. Inmates with IQ scores below 85 were found less likely to complete vocational and academic programs which they entered.

1721 CULL, WILLIAM H. State surveys. In:
Kentucky. Legislative Research Commission. Mentally Retarded Offenders in
Adult and Juvenile Correctional Institutions, Part I: Mentally Retarded Offenders
in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, 1975, Chapter 3, pp. A29-A34.

Questionnaires were mailed to 49 state correctional agencies in order to determine the status of MR offenders within these correctional systems. Forty-eight states returned completed questionnaires. Although 22 states had MR offenders in their correctional systems, few had facilities, programs, or plans for dealing with these individuals, who, they felt, constituted a significant problem. Iowa, North Carolina, and New York were the only states with special facilities for MRs; Tennessee was in the process of opening a special institition for these offenders. Only 8 states in addition to the above-mentioned had special programs for MRs. Three of the 8 states had educational classes geared to the MR level, 2 had a combination of special education and special vocational classes, and only 1 state had only special vocational classes. Massachusetts and Mississippi had separate units for MRs on the grounds of their institutions, with special emphasis on vocational, educational, and recreational rehabilitation, but they considered these programs as insufficient to deal effectively with the MR offender population. Thirty-four states indicated that no future plans had been drafted concerning MR offenders.

1722 CULL, WILLIAM H. Inmate population data. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part I: Mentally Retarded Offenders in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, 1975, Chapter 2, pp. A11-A28.

The MR offender population and its characteristics were investigated and compared with the remainder of the offender population in the

Kentucky adult corrections system. The obtained data were based upon information from the files of 2,788 offenders (93.1 percent of the total offender population) presently incarcerated in Kentucky's penal institutions. At least 122 inmates could be classified as MRs. Eddyville and LaGrange housed the overwhelming majority of MR offenders. Whites and males were slightly overrepresented in the MR population as compared to their proportions in the non-MR population. MR offenders were also older than their non-MR counterparts. The data obtained on institutional assignments illustrated the limited access to rehabilitative programs in general and the differential degree of access afforded the MR offenders as compared to the non-MR population. The percentage of escapes, incident reports, and parole deferments was higher for the MR than for the non-MR offender population. Among the non-MR offenders, the 70-85 IQ population was much more closely associated with the MR population than with the non-MR offenders with IQs above 85 on many variables.

1723 CULL, WILLIAM H. Findings and recommendations. In: Kentucky. Legislative Research Commission. Mentally Retarded Offenders in Adult and Juvenile Correctional Institutions, Part 1: Mentally Retarded Offenders in Adult Correctional Institutions. (Research Report No. 125.) Frankfort, Kentucky, 1975, Chapter 1, pp. A3-A10.

A review of current correctional treatment programs and budgeted upcoming developments in the state of Kentucky indicates that the Kentucky correctional system has little or nothing to offer MR offenders, a group that is being denied a legal and moral right to rehabilitative treatment. In the area of academic education at correctional institutions, even the literacy level of programmed learning requires basic reading skills. The vocational program appears on paper to have great potential value for MRs, but the fact that so few MR inmates are enrolled demonstrates their inability to benefit from such programs. A new forensic psychiatry hospital is intended to provide comprehensive treatment for MRs, however.

1724 PATERSON, MARY; & KUSHLICK, ALBERT. Screening--and segregation? Special Education: Forward Trends, 2(1):12, 1975.

Questions are posed relating to the role of the health visitor in developmental screening of young children and the advantages of home residence versus institutional placement for MR children. Brief answers to the queries indicate: 1) the health visitor has the opportunity and duty to undertake preliminary screening of young children who are not seen at clinics after their first year and to suggest that a pediatric assessment is desirable; and 2) neither day schools nor segregated hostels will automatically provide a better environment for MRs Locally based units, which allow the child to go home for periods of time, may be an alternative to full-time institutionalization at a geographically distant location.

Health Care Evaluation Research Team Winchester, Hants, England

1725 NORLEY, DOLORES. Restitution or revenge? In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Prologue, pp. 3-23.

The present system for providing services for MRs is immorally inadequate and ill-conceived, and the existing correctional system is illogically, inconsistently, and unjustly punitive. Most of the models for handling MR offenders are simply compounded corruptions of both systems. Vast numbers of MR citizens could be prevented from having to be considered as MR offenders if time would be taken to educate the police to the facts of MR. Florida has at least made an effort to remedy the situation by planning a program geared to MRs which acknowledges the potential of these persons for a normal existence. Normalization is the most important thing that can be done for MR lawbreakers. Unfortunately, the development of normalizing programs is hindered by very real dangers. Mavericks and advocates are urgently needed to fight for the replacement of management by medication, the easiest solution, with programs that will replace antisocial behavior with socially acceptable behavior. (17 refs.)

President's Committee on Mental Retardation West Palm Beach, Florida

1726 STEINBOCK, ELIZABETH A. A definitional framework: who is the retarded offender? In: Browning, P. L., ed. Rehabilitation and the Retarded Offender.

Springfield, Illinois: Charles C Thomas, 1976, Chapter 1, p. 27-44.

The array of problems and confusion surrounding the definition of the MR offender is the result of problems inherent in defining MR, not in defining offender. General agreement exists as to the inability of traditional definitions and diagnostic systems to serve the purposes of diagnosis. Like diagnosis, labeling-which is the result of the diagnostic process-also presents a number of problems. The major abuses stem from assumptions about the behaviors believed to be associated with the label, from the erroneous belief that the label does convey useful information, from the inevitable loss of the individual characteristics of a person who is labeled, and from the frequent association of stereotypes with the label. To date, definitional ambiguity and cultural relativity have led to an inability of the label itself to meet the multiple objectives of identifying the MR offender, suggesting a treatment plan, and predicting the probable outcome of treatment. Treating each person as an individual should become the mainstay of criminal justice system rehabilitative efforts. (28 refs.)

Rehabilitation Research and Training Center in Mental Retardation University of Oregon Eugene, Oregon

1727 ZWEIG, HERBERT M. Interdisciplinary team functioning: a case team approach to habilitation in a residential facility for the mentally retarded. Staten Island, New York: Willowbrook Developmental Center, 1975. 38 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76, plus postage. Order No. ED112615.

A case team approach to habilitation used in a residential facility for the MR in New York is described in terms of its functions, structure, and relationship to data gathering systems. The system currently in use has some deficiencies, and reorganization is needed, possibly based on the case team approach, in which each resident is supervised by a designated case manager. An individual case is described through the 4 stages of team functioning (case team assessment, treatment consolidation, program implementation, and resident evaluation). Case review, the use of therapy aides, and means of integrating the new system into the daily routine at the facility are considered.

PROGRAMMATIC ASPECTS - Recreational

1728 THOMAS, WILLIAM E. A Physical Education Program for Adults and Young Adults. Designed for Use with Moderately, Severely and Profoundly Mentally Retarded Adults and Young Adults Beginning with Ages 13 to 15. South Bend, Indiana: Council for the Retarded of Saint Joseph County, Inc., 1974. 128 pp. Available from Information and Research Utilization Center, 1201 16th Street, N.W., Washington, D.C. 20036. Price \$2.00.

A physical education program was designed to improve social awareness skills in moderately, severely, and profoundly MR individuals. Group team play and experiences in movement and physical activity are taught to MR adults and young adults, beginning with age 13 to 15. Various relevant teaching strategies are explained, with emphasis on behavior modification, which is considered vital to the program's success. The following activities are described, along with equipment needed, formation of participants, objectives, directions for play, and other comments: agility, flexibility, endurance, strength, wheelchair games, relays, lead-up, manipulation, and locomotion.

OPPELT, KURT. Instructional basics:
Oppelt standard method of therapeutic and recreational ice skating. *Resources in Education (ERIC)*, 11(7):107, 1976. 38 pp. Available from Kurt Oppelt, P.O. Box 13, State College, Pennsylvania 16801. Price \$3.50.

Instructional basics of the Oppelt standard method of therapeutics and recreational ice skating are explained. The benefits of therapeutic ice skating for the handicapped and the elderly are outlined. For the MR and physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of therapeutic ice skating are physically handicapped the benefits of th

logical (improved flexibility and posture), psychological (increased satisfaction and self-concept), and social (opportunities for socialization and recreation). Photographs and instructions for stops and turns, steering, and dry-land practice exercises are provided.

1730 GEDDES, DOLORES M.; & BURNETTE, WANDA L. Physical Education and Recreation for Impaired, Disabled and Handicapped Individuals... Past, Present, and Future. Washington, D.C.: American Alliance for Health, Physical Education, and Recreation, Information and Research Utilization Center, 1975. 422 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$22.09, plus postage. Order No ED119396.

The state of the art in recreation/therapeutic recreation and physical education/adapted physical education for blind, multiply handicapped, MR, epileptic, diabetic, or deaf individuals is reviewed. Research data, empirical evidence, program descriptions, and information resources are reviewed, and a discussion of priorities in research, demonstration projects, personnel development, and media utilization is presented. Ongoing research projects in the field, funded by either the U.S. Bureau of Education for the Handicapped or the states' education agencies, are described. The report also covers community recreation and creative arts for the handicapped and their integration into regular activity programs, development of special play apparatus for handicapped children, and diagnostic-prescriptive teaching/programming.

1731 South Florida University. Play learning centers for preschool handicapped children: research and demonstration project report. Bowers, Louis; et al. Tampa, Florida: College of Education, 1975. 108 pp. Available from University of South Florida, College of Education, Tampa, Florida 33620. Price: Free.

Three play learning centers designed for preschool MR and cerebral palsied children and preadolescent and adolescent emotionally disturbed children are analyzed. The design of existing playgrounds for the handicapped, research on playground equipment, and the design of play learning centers are considered. Framing materials, surface coverings, materials for fastening, and recommended tools are discussed, along with the design process, construction and construction costs, and recommended materials. Facility use of play learning centers at the United Methodist Preschool Play Learning Center, the Residential Treatment Center for emotionally disturbed children, and the United Cerebral Palsy Play Learning Center are analyzed. Appendices include a program for information dissemination associated with a play learning research and demonstration project, a playground design checklist, and construction plans for each of the 3 centers.

1732 Oregon University. Common Unity in the Community: a Forward Looking Program of Recreation and Leisure Services for the Handicapped. Fairchild, Effie; & Neal Larry. Eugene, Oregon: Center of Leisure Studies, 1975. 113 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$570, plus postage. Order No ED116360.

Information related to the Common-Unity program, which provides recreation and leisure services for the handicapped within the local community, is provided. The philosophical basis of the project is presented, and readings presented at a conference on the Common-Unity program are reviewed. Community education was discussed in 4 papers entitled: "Community Education and the Handicapped", "Community Education -- Perspective and Potential', "Community School', and "Community Education and Community Schools.' Three papers each were focused on special education needs and trends, and recreation. Other information about the program includes conference group reports, a list of participants, a conference summary and evaluation, and a listing of community education regional and cooperating centers.

1733 (Information and research utilization center in physical education and recreation for the handicapped) listing of materials.

Washington, D.C.: American Alliance for Health, Physical Education, and Recreation, 1975. 7 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83, plus postage. Order No. ED117608.

A bibliography of information for physical education and recreation for the handicapped, which lists all materials that have been developed and distributed through the Information and Research Utilization Center from 1972 through 1975 is presented. Relevant materials sent to resource contacts and/or ERIC are also included. The prices for some of the materials and the addresses of the distributors are provided in the citations, which include program reports, instructional guides, bibliographic resources, and articles and books about various aspects of physical education and recreation for impaired, disabled, and handicapped persons.

1734 RUSSO, TONY. CAMPS = clients + administrators + motivating programs + staff. Education and Training of the Mentally Retarded, 10(4):292-293, 1975.

Camping has instructional, occupational, and recreational facets which may be of value for the MR; however, successful camping programs must be integrated with trends which are currently reflected in the education and training of EMR, such as mainstreaming, the normalcy principle, diagnostic and prescriptive planning, and behavioral objectives. Strategies which can insure a more cohesive and integrated camp environment with present agencies who are responsible for the care and training of the MR include: year round camping combining opportunities for authentic environmental instruction and seasonal self-help skills with recreation and leisure activities; greater heterogeneity of groupings to reflect increased educational placement in mainstreamed educational settings; and recruitment of a sensitive, dedicated, and informed staff. A good program will encompass clients, administrators, motivating programs, and staff, with the component flow generally in a circular direction to produce optimum functioning individuals.

Department of Special Education University of Maryland College Park, Maryland 1735 ROSENTHAL, SOL RAY. Risk exercise and the physically handicapped. *Rehabili*tation Literature, 36(5)44-149, 1975.

This study questioned whether sports, e.g., horseback riding, could provide benefits in addition to the pleasure of riding. Ss were 102 handicapped children in centers in England, Ireland, Wales, Canada, and the U.S. Ss' disabilities often required placing them on horses and holding them there by harness or manually. Ninety percent of the Ss had a reasonable outlook as to their infirmity while 2 percent were disenchanted; 6 percent were apprehensive. Sixty-eight percent were self-assured, and 32 percent were uncertain regarding physical movement. Questionnaires were

sent to centers where horseback riding is provided for the handicapped. Results indicate that horseback riding for the physically handicapped has a new dimension: in addition to the pleasure derived, there were feelings ranging from elation to euphoria and increases in mobility, motivation, and courage. Preliminary study and results described were obtained from subjective impressions of the professionals involved. The findings suggest that more sophisticated studies should be conducted where objective findings of mobility, motivation, and courage are measured instrumentally or by psychological testing.

Research Foundation Chicago, Illinois

FAMILY

1736 REID, JOHN B. A family intervention approach to delinquent behavior. In: Browning, P. L., ed. Rehabilitation and the Retarded Offender. Springfield, Illinois: Charles C Thomas, 1976, Chapter 10, pp. 194-206.

A strategy has been developed to teach parents to help their children if they begin to develop serious antisocial or delinquent patterns of adjustment. The main requirement for treatment is that the children and parents be able to communicate about their behavioral problems concretely with the therapist. The program is relevant for preadolescents who are referred by community agencies for high-rate aggressive, out-of-control behavior. The major thrust of the program is to teach the parents to dismantle the child's maladaptive behavior into highly specific components which may be easily monitored and communicated to the child, to negotiate with the child a consistent and predictable set of consequences for compliance and noncompliance with the family's rules of conduct, and to systematically encourage and reinforce the child's attempts to follow the rules. Follow-up studies have indicated the general success of family intervention. (24 refs.)

Oregon Research Institute Eugene, Oregon

1737 MCCURLEY, ARLENE BELL. Answers for parents of the child with learning disabilities. Showing and telling it like it is! Lake Charles, Louisianna: Calcasieu Parish School System, 1975. 18 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$158, plus postage. Order No ED107030.

Parents of learning disabled children are provided with answers to questions about learning disabilities. Learning disability is defined, and behavior that may be expected from a learning disabled child is described. Guidelines are offered

for parents who suspect that their child may have a learning disability, and the chances of a learning disabled child succeeding in school are discussed. Suggestions are given for disciplining a learning disabled child and management of a hyperactive child. It is noted that any combination of certain symptoms may cause an LD child to fail despite his normal intelligence: poor self-esteem, inability to receive and organize sensory information, poor listening ability or attention, inability to deal with sequence, or poor concept of time and spatial relationships.

1738 BLACKLOCK, DOTTIE. Older and handicapped children are adoptable: the Spaulding approach. Chelsea, Michigan: Spaulding for Children, 1975. 43 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$195, plus postage. Order No. ED107074.

The approach used by the Spaulding adoption agency for difficult to place older and handicapped children up to 16 years of age involves an initial estimation of the child's functional abilities and the family's parenting abilities, and the provision of continued guidance after placement. The placement histories of 2 hard to place children are detailed. The implications for adoption possibilities of blindness, spina bifida, cerebral palsy, perceptual handicaps, cleft palate, MR, deafness, and diabetes are outlined.

1739 Colorado. State Department of Institutions. Home-agency interaction: a minicourse in communication with parents of the developmentally disabled. Workbook. Padzensky, Herb, et al. Denver, Colorado: Division of Developmental Disabilities, 1975. 42 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$195, plus postage. Order No. ED116446.

This workbook, which is designed for use with a minicourse in communication with parents of the developmentally disabled, includes problems and exercises related to specific information contained in a participant manual. An evaluation of unit objectives is provided at the conclusion of each unit, the answers to which are contained in an instructor's manual.

1740 Colorado. State Department of Institutions. Home-agency interaction: a minicourse in communication with parents of the developmentally disabled. Instructor's manual. Padzensky, Herb, et al. Denver, Colorado: Division of Developmental Disabilities, 1975. 53 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$3.32, plus postage. Order No ED116447.

This instructor's manual, designed to be used by the teacher of a minicourse in communication with parents of developmentally disabled children, provides answers to workbook exercises, unit assessments, criterion assessment examination, and pretest and posttest. Twelve recommendations are included to facilitate the teaching of the minicourse.

1741 Colorado. State Department of Institutions. Home-agency interaction: a minicourse in communication with parents of the developmentally disabled. Participant's manual. Padzensky, Herb, et al. Denver, Colorado: Division of Developmental Disabilities, 1975. 146 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$6.97, plus postage. Order No. ED116445.

This participant's manual for a minicourse in communication with parents of the developmentally disabled consists of 5 units. Unit titles and sample topics are as follows: 1) parent-teacher conferences (typical sequences of parent reactions); 2) reporting to parents (scheduling and methods); 3) the home training program (emphasis at each developmental level); 4) community resources for the developmentally disabled (use of a service directory); and 5) a review and case study. Goals, objectives, content, and approximate

time requirements are listed for each unit of the minicourse. The instructional package for this course also includes a workbook and an instructor's manual.

1742 ALOVISETTI, MAX; & WEAVER, JOSEPH. Perceptions of psychological distance to parents in institutionalized, retarded and normal children. Resources in Education (ERIC), 10(12):46, 1975. 4 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No, ED109572.

Perceptions of psychological distance to parents among 3 groups of 36 children (institutionalized MR, noninstitutionalized MR, and normal) were investigated. The children were matched for mental age and were administered a test of psychological distance, the Sticker Family Game. It was determined that there was significantly less psychological distance between the child and parental figures in the MR groups than was observed in the normal group.

1743 BIRENBAUM, ARNOLD; & SEIFFER, SAMUEL. The family and its surrogates. In: Birenbaum, A.; & Seiffer, S. Resettling Retarded Adults in a Managed Community. New York, New York: Praeger, 1976, Chapter 7, pp. 75-82.

With the boundaries between those who were family and those who were fellow residents seeming to be less distinctively drawn by residents as they became familiar with living with others, relationships changed and potential family substitutes developed. The MR adults who returned to the community often wished to be located closer to their families, yet these families had voluntarily, and perhaps reluctantly, placed them in state facilities many years before. Although many parents immediately recognized the physical advantages of the new Gatewood facility as compared with the overcrowded and rundown dormitories of the state schools, some openly questioned the advisability of having their children work in community-based programs and receive other services in the community as well. Ultimately, greater independence than ever before was manifested in the residents' relationships with their families. Increasingly, residents became

reliant on familial surrogates, largely those developed among the residents themselves and without the help of the staff. While living at home was always hedged by the continued uncertainty produced by the possibility of the death of one's parents, Gatewood represented a source of constant care and support.

Albert Einstein College of Medicine Yeshiva University Bronx, New York

1744 STONE, NANCY W. A plea for early intervention. *Mental Retardation*, 13(5)16-18, 1975.

Psychoeducational programming for the biologically handicapped should begin in infancy and should be directed toward establishing a mutually reinforcing mother-child system to facilitate transactions between the child and his environment. Training parents in special educational techniques should emphasize facilitating the child's development, resulting in enhanced motherchild communications and an increase in mutually satisfying transactions. The validity of these recommendations is supported by observations relating to the mother's response to the child's handicap, the disruption of mother-child communication and feedback cycles, and maternal withdrawal. There is theoretical support for the expectation that psychoeducational programming will have a positive effect on the child's development. (26 refs.)

Infant Development Project Gulf Regional MH/MR Center Galveston, Texas

1745 TYMCHUK, ALEXANDER J. Training parent therapists. *Mental Retardation*, 13(5):19-22, 1975.

A model for working with parents of developmentally disabled children combined: 1) direct training of parents in the application of operant learning principles; 2) helping them deal with feelings related to having handicapped children; and 3) disseminating accurate information about child development, specific resources for their child, and characteristics of the handicapping disorder. Social workers were trained to be parent therapists in an 8-week program which presented

the parent therapy model and utilized cases selected by the workers for discussion of dynamic and therapeutic principles. A therapy encompassing both dynamic and behavioral principles as well as didactic information seemed to be efficacious in working with parents of handicapped children.

Department of Psychology and Psychiatry University of California Los Angeles, California 90024

1746 MCKAY, DIXIE. Parent handbook: for parents of children who learn in different ways. Portland, Oregon: Oregon Association for Children with Learning Disabilities, 1975. 15 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No. ED112589.

Management guidelines are suggested for parents of children with learning disabilities. Parents are instructed in how to recognize symptoms of learning disability, how to manage learning disabled children, and how to provide activities for their children which will stimulate learning. Hyperactivity is discussed, and suggestions are offered for working with the child's teachers and principal. Books and pamphlets about learning disabilities are listed.

1747 RAMEY, CRAIG T.; MILLS, PAMELA; CAMPBELL, FRANCES A.; & O'BRIEN, CAROLYN. Infants' home environments: a comparison of high-risk families and families from the general population. American Journal of Mental Deficiency, 80(1):40-42, 1975.

Homes which are considered potentially high contributors to the developmentally retarded population differed significantly from homes drawn at random from the general population on all dimensions of the Home Observation Measurement of the Environment. The general population group scored higher on the 43 items which were related to maternal warmth, absence of restriction and punishment, organization of the environment, appropriate toys, maternal involvement, and opportunities for variety. No significant differ-

ences were found between 15 high risk children who attended a day care intervention center and 15 high risk subjects who remained at home. Mothers who had children attending the day-care center were rated as more involved with their infants than were other disadvantaged mothers whose children remained at home. The high energy expenditures disadvantaged mothers often use to keep the household intact may account for this difference. (8 refs.)

Frank Porter Graham Child Development Center University of North Carolina Highway 54 Bypass West Chapel Hill, North Carolina 27514

1748 DROTAR, DENNIS; BASKIEWICZ, ANN; IRVIN, NANCY; KENNELL, JOHN; & KLAUS, MARSHALL. The adaptation of parents to the birth of an infant with a congenital malformation: a hypothetical model. *Pediatrics*, 56(5):710-717, 1975.

Structured interviews with the parents of 20 children with a wide range of congenital malformations (including mongolism, congenital heart disease and cleft palate) indicated that their adaptation to the birth of a congenitally handicapped child was a gradual process which involved coping with a number of complex issues, including their anxieties and sadness related to their infants. Analysis of the interviews, which were held 7 days to 60 months after the birth, demonstrated 5 stages of parental reactions: shock, denial, sadness, anger, adaptation, and reorganization. The importance of pediatric advice, support and parent counseling during the baby's first year of life is suggested by the complexities of the parents' emotional reactions. Family counseling, based on a crisis intervention model, may result in a significant improvement in the family's adjustment to the birth of a child with a malformation and the ongoing care of the child. (34 refs.)

Department of Pediatrics Rainbow Babies and Childrens Hospital 2103 Adelbert Road Cleveland, Ohio 44106

1749 TRUPIN, ERIC W.; et al. Parents do more when they know more: an evaluation model. Resources in Education (ERIC),

11(5):100, 1976. 23 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$1.58, plus postage. Order No ED116371.

Seventy five children (mean age of 7.3 years) were administered the Reitan Indiana Neuropsychological Test Battery, or the Halstead Neuropsychological Test Battery for Children, depending upon age, in order to evaluate learning or behavioral deficits. Assessments were made of intellectual, academic, developmental, and social performance. Training and strategies designed to intervene and remediate in areas of assessed disabilities were provided to parents of the children. Behavior management principles were taught to the parents, and they were urged to keep records regarding their participation. Investigators also made regular home visits. A reevaluation on all instruments occurred at the end of a 12 month period. Information obtained in this study measured the effect of intervention programs on neuropsychological functioning.

1750 WARFIELD, GRACE J. Effects of an educational program for parents of retarded children. *Resources in Education (ERIC)*, 10(9):93, 1975. 149 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$6.97, plus postage. Order No ED105586.

The Sheltering Arms Parent Interview Schedule was administered to 61 mothers of elementary school aged MR children in order to study the effects of an educational program for parents on these women. Responses were reviewed regarding the effects of the program on the mothers' personal lives; the degree to which the information and services were generalized to other social and community situations; and the program's effectiveness in alleviating family difficulties. Statistical analysis revealed that the mothers' perceived benefits in management of the MR child were directly related to professional assistance from the director and teachers in individual conferences: resolution of family problems and increased feelings of self-worth were also among the benefits of the program. Other advantages to the mothers included aid in achieving intellectual and emotional acceptance of the parental role, and regarding sterilization decisions and child discipline. Implications of the study for teacher education and school programs included emphasis on using parents to aid teacher training, the use of resource teachers to work with parents, and emphasis on teacher experience and training with adults.

1751 MCCONKEY, ROY; & JEFFREE, DOROTHY. Partnership with parents. Special Education: Forward Trends, 2(3):13-15, 1975.

A research project has been designed to help parents of MR children develop and maintain an active teaching relationship with their children. Project aims are: 1) to investigate the best means of guiding parents to help their child develop more effectively; 2) to establish the effectiveness of home teaching games designed for use by parents and for promoting the children's physical, social, cognitive, and other specific skills; and 3) to disseminate information arising from the study to professional workers and parents. Emphasis is on fostering the development of cognitive skills in preschool children. The major part of the project entails an intensive study of 20 to 25 MR children and their parents. Teaching skills are conveyed through observational techniques and are characterized by emphasis on precise objectives. After parents practice the skills they have observed, they are encouraged to formulate their own teaching objectives and to plan their own schemes. (10 refs.)

Hester Adrian Research Centre Manchester University Manchester, England

1752 PARFIT, JESSIE. Siblings of handicapped children. Special Education: Forward Trends, 2(1):19-21, 1975.

Information, emotional help, and education are 3 very important needs of siblings of handicapped

children. Although exact needs and ways of meeting them vary according to the age of the normal siblings, a program to help siblings should include: 1) counseling parents on how to explain a handicap to their other children; 2) production of simple literature to explain disabilities to older children; 3) encouraging siblings to visit and take part in day or residential facilities for the handicapped; 4) integration of handicapped and normal children in regular classrooms; and 5) individual discussions between the physician of the handicapped child and the siblings. A successful program for adolescent siblings of MRs (Schreiber and Feeley, 1965) utilized group meetings under the auspices of a case worker to discuss common problems.

1753 BALLARD, ROD. Special parents, special relations. Special Education: Forward Trends, 2(3):10-12, 1975.

Although there are many factors which work against creative parent-teacher involvement, the achievement of educational objectives depends on the relationship between home and school. Teachers in special schools may be responsive to parents to a limited degree, but the quality and content of communications between the 2 groups are often unsatisfactory. Relationships are promoted within various formal school functions, and few opportunities are provided to discuss anything other than practical concerns. Four proposals for improving the relationships between parents and teachers of handicapped children include: 1) arranging teacher visits to the homes of children; 2) providing parents with group experiences to talk about their children and themselves; 3) integrating parents into a team approach to community care along with teachers, doctors, and social workers; and 4) encouraging parents to help in the classroom on a regular basis.

Department of Social Work Exeter University Exeter, England

PERSONNEL

1754 KELLY, N. KAREN.; & *MENOLAS-CINO, FRANK J. Physicians' awareness and attitudes toward the retarded. *Mental* Retardation, 13(6):10-13, 1975.

Sixty pediatricians and general practitioners from a city with nationally recognized services for the MR were surveyed to determine physician awareness of community-based services and practices regarding referral to local services. Responses from 32 physicians indicated that 56 percent were not familiar with local parents' associations and 38 percent were not aware of a regional system of MR services. Over threequarters of the physicians sometimes recommended institutionalization for moderately MR patients. Although 71 percent of the physicians indicated that they gave material about MR to some or all of the parents of MR patients, only 10 percent of the parents reported receiving such material. Forty-three percent of the parents reported satisfaction with the physician's attitude toward the child, although 68 percent were satisfied with medical advice and treatment. Local agencies should take immediate steps to increase physician awareness of their services, and medical schools should increase training related to management of MR. (4 refs.)

*Department of Pediatrics University of Nebraska Medical Center Omaha, Nebraska 68106

1755 Nebraska University Medical Center.

Giving a Head Start to Parents of the Handicapped. Omaha, Nebraska, 1976.

185 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$10.03, plus postage. Order No. ED119434.

In answer to inquiries from personnel connected with Head Start, a manual was developed to help staff members encourage and support the parents of handicapped children. General background information and special problem areas are

discussed in relation to the following topics: the mother's role in child care; early childhood education; mainstreaming; labeling; confidentiality and legal rights; nutrition; transition to public school; and the supportive role. Specific advice is offered for dealing with parents of children with visual impairments, hearing impairments, orthopedic disabilities, speech and language disorders, health impairments, asthma, epilepsy, MR, severe emotional disturbances, specific learning disabilities, and multiple handicaps. Handling of parents suspected of child abuse or neglect is also discussed. Types of handicapping conditions served by Head Start are listed, and Head Start authorization forms are appended.

1756 Pennsylvania State University. Goal planning with developmentally disabled persons: associate instructor's manual. Houts, Peter S.; & Scott, Robert A. Hershey, Pennsylvania, 1975. 27 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$206, plus postage. Order No. ED119432.

An associate instructor's manual was developed for use in conjunction with a 5-session training workshop on goal planning for the developmentally disabled. Front-line staff participate in these workshops. The associate instructor has 8 responsibilities, including contracting participant's supervisors to ensure their support. Workshop arrangements such as group size, composition, and instructor qualifications are described, and equipment and materials needed are discussed. Possible group questions are suggested, along with appropriate instructor responses, and recommendations are offered to facilitate interaction with hostile groups or participants. The activities to be covered in each of the 5 sessions are described in detail.

1757 Pennsylvania State University. Goal Planning with Developmentally Disabled Persons: Procedures for Developing an Individualized Client Plan. Houts, Peter S.; &

Scott, Robert A. Hershey, Pennsylvania, 1975. 98 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.83; HC \$4.67, plus postage. Order No. ED119431.

Strategies were devised for training staff members in developing an individualized client plan for goal planning with developmentally disabled persons. Small groups of 4 to 8 staff members participate in workshops, which are taught by audiotape supplemented by an associate instructor. Four goal planning methods are emphasized: client involvement from the onset; utilization of the client's strong points to set goals for meeting his needs; achieving goals in small steps; and defining the client's responsibilities. Each of the 5 lessons is accompanied by summaries, cartoon illustrations, and evaluation forms.

1758 ALLARDICE, MARGHERITTA S.; & CROWTHERS, VIRGINIA L. The role of the practitioner in serving the elderly mentally retarded. In: Hamilton, J. C.; & Segal, R. M., eds. Proceedings of the Consultation-Conference on the Gerontological Aspects of Mental Retardation, held in Ann Arbor, Michigan, April 8-10, 1975, pp. 33-67.

Services to, with, and on behalf of individuals who had been released from state mental institutions into community placement were developed by Senior Center, Inc., a community agency dedicated to providing recreation and socialization to residents of eastside Detroit (Michigan) who were 55 years of age or older. The Adult Care Services Project was initiated in February, 1973, with the aim of increasing input of social and rehabilitative services to previously hospitalized persons placed in supervised living situations in an effort to facilitate their reintegration into the community and to decrease the existing rate of rehospitalization. The major movement toward objectives was to increase the number of hours spent by clients with agencies and programs in the community. Client behaviors were found to be the results of long years of institutionalization. Since the onset of the project, staff members have maintained a working relationship with more than 40 homes, involving over 600 residents. The 1 social worker has functioned as a specialist and consultant to all staff to help them to handle case situations. The

remaining staff have functioned mainly as links to help residents and home providers to make use of community resources.

Senior Center, Inc. Detroit, Michigan

1759 KAUFMAN, RUTH L. The social worker in a public day school for TMRs Mental Retardation, 13(5):31-32, 1975.

The functions of the social worker in a public day school for TMRs have been molded by the educational process. The intake process at the Rosemary Kennedy School (Nassau County, New York) defined a major function, assigning prime importance to the initial contact between the social worker and parents of prospective students. The most important aspect of the social worker's role entails her continuing relationship with the parents in providing a liaison between home and school. The worker's relationship with the teacher is also crucial to the child's educational progress. The greatest challenge to the social worker is to go beyond the school and to become an advocate for MRs in the community. (7 refs.)

Rosemary Kennedy Center Board of Cooperative Educational Services Nassau County, New York

1760 TYMCHUK, ALEXANDER J.; & MOOR-ING, IVY. Interest and training of Region 2's psychologists in MR. Mental Retardation, 13(3):24-25, 1975.

Responses from 291 psychologists in California who had completed their professional training indicated that they want and need more training related to MR. Although 61 percent described their training for working with the MR as adequate, 73 percent thought that further training would be helpful. Workshops and clinical demonstrations were preferred training methods, with internship the least desired. Half of the respondents were working in the field of MR; 73 percent reported that they had had some past experience with MR. Affirmative responses regarding knowledge of some key concepts and legislation concerning the MR were generally low.

Psychology Training

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1761 GAROVE, WILLIAM E.; HANDLEY, E. EUGENE.; & STEVENS, GODFREY D. The Shannon State School and Hospital Simulator: simulation materials for superintendents and other management personnel. Mental Retardation, 13(3):32-35, 1975.

The Shannon State School and Hospital simulation materials have been designed to provide superintendents and other management personnel employed in MR facilities with a reality-based context in which to exercise problem-solving and decision-making skills and to experiment with innovations in service delivery. Materials consist of slide presentations, descriptive documents, inbasket and live encounter items, and an Instructor's Manual. The effectiveness of the simulation materials in training was ascertained in 3 pilot workshops. The Shannon Materials can be used for pre-service and in-service training in institutions, university programs, or public health administration programs. They are a means for linking management theory and practice in situations encountered in institutional management. Future applications of materials could include cadre training and the study of management behavior. They could also be utilized as instruments for screening and evaluating prospective job applicants. (5 refs.)

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1762 Report on Guardianship of the Mentally Retarded Throughout the World. San Sebastian, Spain: International Information Service on Mental Retardation, 1975. 131 pp. Available from ERIC Document Reproduction Service, Box 190, Arlington, Virginia 22210. Price MF \$0.76; HC \$697, plus postage. Order No, ED108403.

The status of guardianship of the MR (MH) in 37 nations located in Europe, North America, South America, Asia, Africa, and Oceania is reported. Information was provided by the Societies of the

International League on Mental Retardation, and included topics such as: the function of the national societies in guardianship, guardianship as a profession, procedures for determining incapacitation, the hindrances of existing systems and the possibilities for change, those countries in which explicit guardianship provisions for the MH exist, the variety of guardianship systems, those systems which require a special judge, and the involvement of foundations, organizations, and specific social groups with the guardianship question. A copy of the questionnaire and a list of those responding to the questionnaire are included, as well as a summary of U.S. data, a list of legislative sources on guardianship, the dates of specific and general guardianship legislations, and a bibliography.

1763 KUSHLICK, ALBERT. The rehabilitation or habilitation of severely or profoundly retarded people. Bulletin of the New York Academy of Medicine, 51(1):143-161, 1975

Data from the United Kingdom Wessex Survey on the distribution of all known MRs and personnel available to treat them indicate the scarcity of professional personnel in relation to the size of the professional commitment required to work with the handicapped. Survey data suggest the need to maximize the effectiveness of physicians and other professionals in pursuing goals relevant to the MR. The clearest function of the physician is the identification of organic or physiological variables which affect the handicapped person and can be manipulated to prevent further behavioral deterioration. Other functions include directing service personnel toward a rehabilitation or habitation approach; designing a prosthetic environment for patients; and determining when mechanical or chemical procedures should be used to restrain behavior. Studies are presently being undertaken on means of distinguishing high quality care from low quality care for the MR. The role played by medical specialists in providing services for people with severe or profound MR constitutes only a small portion of the role they will be required to play in helping people with any sort of chronic handicap. (28 refs.)

Health Care Evaluation Team Wessex Regional Health Authority Winchester, England 1764 DAVIS, J. A.; & BAMFORD, F. N. The community paediatrician in an integrated child health service. Archives of Disease in Childhood, 50(1):1-3, 1975.

The community pediatrician's role should focus on clinical care to individual children and include identification, diagnosis, and treatment of handicapped children as well as preventive and protective services to deprived, disadvantaged, and delinquent children. Close relationships are needed between the community pediatrician (who works at a district level) the area level community physician responsible for child health, social workers, and family physicians. In view of the increased need for community pediatricians, it is suggested that nearly all senior pediatric registrars should spend a quarter of their time in learning community aspects of their subject. A new training pattern for specialists should include such components as genetics, immunoprophylaxis, social administration, child law, and educational theory. (19 refs.)

Department of Child Health St. Mary's Hospital Hathersage Road Manchester, England

1765 *PRESTON, E. NOEL; & NELSON, W. E. Who should care for the sick newborn in fant? Journal of Pediatrics, 87(5):836-837, 1975. (Letter)

To limit the functions of a neonatologist in a community-based hospital in order not to infringe upon the formerly exclusive domain of the pediatrician would be to deny sick patients the best possible care. If a hospital has an intensive care nursery for sick newborn infants and medical coverage by competent neonatologists, these physicians should be in charge of management of the seriously ill infants. Realistically, such management requires 24-coverage by a neonatologist. The pride, embarrassment, jealously, or honest ignorance of a pediatrician should not interfere with optimum provision or delivery of health care within a given community. In general, true regional planning is long overdue, and the fault lies primarily with the medical profession. (1

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1766 LEVITT, SOPHIE. Care of the pre-school handicapped. *Lancet*, 2(7941):928, 1975. (Letter)

The nurse-therapist-teacher combination for work with handicapped children of preschool age may be a very valuable one and deserves support. This combination has been utilized with success in the treatment of cerebral palsied children in a clinic in Africa, and physiotherapists, occupational therapists, and speech therapists have been led towards the role of cerebral palsy therapist or generic therapist for motor-handicapped children. The problems of training a generic therapist or nurse-teacher-therapist are far outweighed by advantages to the affected child and his family.

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1767 LEE, D. H. The role of teachers in hospitals. Special Education: Forward Trends, 2(3)21-23, 1975.

Unfamiliar material and unfamiliarity with handicaps are among the problems faced by teachers who work in single hospital wards or hospital schools. Inservice training, conferences, and hospital training sessions are 3 ways in which hospital teachers can confront their problems and discuss matters of professional interest. Although hospital teaching is not built around a timetable or syllabus, remedial, compensatory and antiinstitutional measures can help to structure the educational experience. It is important for the teacher to have modest and realistic goals and to display personal traits of humanity, maturity, temperamental stability, and a strong sense of humor. Teachers also have a role in encouraging parental visits, helping parents to use visiting time constructively, and promoting continuity between hospital, home, and school experiences.

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